DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line† — *Only for Foreign Telegrams. †Not for Foreign Telegrams.

No. Dated

To

To be issued on	Issued on
1st Reminder	
2nd Reminder	
3rd Reminder	
Heading :	
Case or Diary No.	
If post copy of telegram required	
Date of despatch of above	
List of enclosures	

(Code word for telegrams.)

S. 5.

)GIPC—81—168(Gen)MFP—(M-1083 —3-5-31—50,000 Pads

SNG

No 1043

To

The Chief Commissioner
of Coorg

Financial Department

Sir

In reply to your letter No 481 dated 7th September 1869, I am directed to inform you that His Excellency the Governor General in Council sees no reason for the continuance of the payment of Batta to the Superintendent at Coorg on his Establishment, for the period of his temporary sojourn at Fraserpett during the Monsoon Months. —

2 The practice will therefore be discontinued. —

I have the honor to be
Sir
Your most Obt. Servt.

W D Sherriff

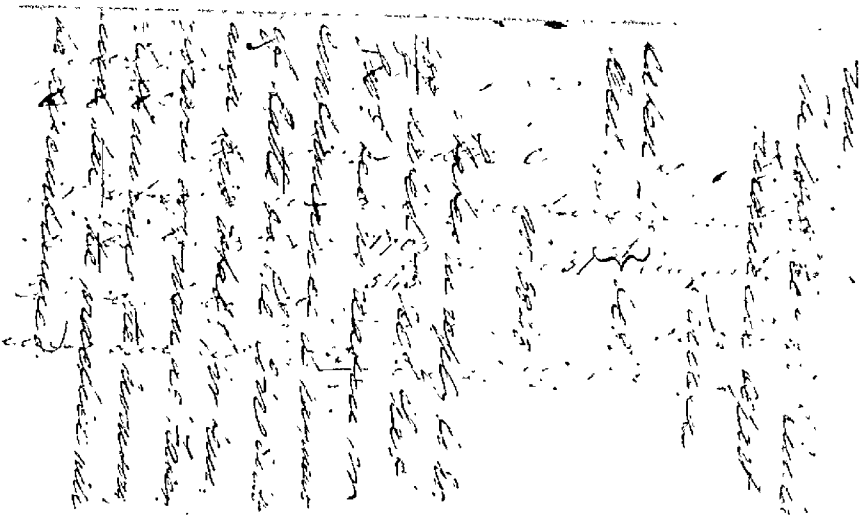
Asstt Secretary to the Govt
of India

Simla
October
the 4th September
1869

Copy forwarded to the Comptroller General of Accounts and to D. A. G.

Public Works Department
For information. —

cc
2/10



Old Records

File No. 26

Collection No.

19 .

Office of the Chief

Commissioner of Coorg

Bangalore.

Pros. Serial Nos. 1-3

Subject.

Bee-keeping

Information regarding ---in India.

Previous References.	Later References.
(25)	

S. 97.—Green).

MFP—215S&P—(M-245)—21-6-34—30,000.

Table of Contents. File No.26 of O.R.

Letter No.8/412-422 dated the 29th December 1881 from the Government of India, Revenue and Agricultural Department to the Chief Commissioner of Coorg asking for any information that may be available on bee-culture in Coorg.(s.1)

G of I, Reve. and Agri.Department circular No.2 G dated the 19th January 1882 forwarding extract from a letter by Mr.J.Douglas on the subject of beekeeping and honey production in India(s.2)

Government of India, Revenue and Agricultural Department Circular No.27 G dated the 27th April 1883 reviewing the replies of Local Governments and Administrations to enquires on the subject of bee culture in India(s.3)-

SN 1

No. $\frac{8}{412—422}$ G.

FROM

E. C. BUCK, Esq., C. S.,

Offg. Secretary to the Government of India.

To *The Chief Commissioner for Coorg.*

Rev. & Agri. Dept.
General.

Fort William, the 29th December 1881.

SIR,

I AM directed to forward copy of a despatch* and its accompaniments from Her Majesty's Secretary of State for India, relative to a proposal by Mr. John Douglas of the Indian Telegraph Department regarding bee-keeping in India.

* No. 97 (Revenue), dated 10th November 1881.

2. Mr. Douglas desires to have some information on the subject, and as it appears to be one of practical interest, I am to request that any particulars which might be useful to him may, ~~with the permission of~~ _____ be reported to this Department. The extent to which good honey is found in any part of Coorg might be indicated, and any methods followed by Natives in bee-keeping might be described. It will be noticed that Mr. Douglas specially seeks some account of past efforts in the direction of successful bee-keeping.

I have the honour to be,

SIR,

Your most obedient Servant,

Offg. Secretary to the Govt. of India.

To the Secretary to the Government of Madras.
" " " of Bombay.
" " " of Bengal.
" " " of the North-Western Provinces and Oudh.
" " " of the Punjab.
" Chief Commissioner of British Burma.
" " Central Provinces.
" " Assam.
" " for Coorg.
" " Ajmere.
" Secretary for Berar to Resident, Hyderabad.

1881

GOVERNMENT OF INDIA.

REVENUE AND AGRICULTUR. DEPARTMENT.

GENERAL.

No. 41

..... the 29th December 1881.

Copy to Govt. Cons. —

letter acknowledging copy to Bo
asking him to furnish the
with any info that
be available on back
SUBJECT. — Apicul

Asks for any information that may be available on the ject of bee-culture in India.

Replies anticipated 0 0.

D. N. M.—Home Department Press—No. 14—30-12-81—320.

No. 97 (Revenue), dated India Office, London, the 10th November 1881.

From—Her Majesty's Secretary of State for India.

To—His Excellency the Most Honourable the Governor General of India in Council.

I forward herewith a copy of correspondence with Mr. John Douglas, of the Telegraph Department, now at home on leave, relating to the introduction of bee-keeping in India, together with a Memorandum by the Special Assistant in my Revenue, Statistics, and Commerce Department on Mr. Douglas' letter.

2. The subject appears to me to be of sufficient practical interest to engage the attention of Your Excellency's Government.

Dated India Office, London, the 10th November 1881.

From—Sir Louis Mallet, C.B., Her Majesty's Under Secretary of State for India.

To—John C. Douglas, Esq.

I am directed by the Secretary of State for India in Council to acknowledge the receipt of your letter of 29th September last, stating that you are practically studying bee-keeping, with a view to its introduction among the natives of India, and asking if any information relating to the domestication of the Indian honey bee exists in this Office, to which you might have access.

2. In reply, I am to state that no official reports on bee-keeping in India have, so far as can be ascertained, ever been received in this Office. The subject, however, is one of great interest, which was, Lord Hartington has been informed, partially investigated by the late Mr. Woodbury, of Exeter, and you might probably with advantage place yourself in communication with Mrs. Woodbury's brother, Mr. William Horton Ellis, of Hartwell House, Exeter, the President of the Local Branch of the British Bee-keepers Association, founded by Sir John Lubbock in 1874. A full account would appear to be given in Moorcroft's Travels of the mode in which bees are kept in Cashmere. It is probable also that the Agricultural Department of the Government of India may possess papers relating to the production of honey in India generally.

Dated 207, Isledon Road, Finsbury Park, London, N., the 29th September 1881.

From—John C. Douglas, Esq., Indian Government Telegraph Department (on leave).

To—Her Majesty's Secretary of State for India.

I have made myself acquainted with the practical details of bee-keeping, with a view to its introduction among the natives of India, who, so far as my inquiries go, take honey and wax from wild bees only.

2. As sweets form so important a constituent of the Native dietary, there would, no doubt, be ample demand for honey for domestic consumption.

3. I am of opinion that the climate is favourable to successful bee-keeping, and some of the plants extensively cultivated (*e. g.*, mustard) would yield honey in abundance.

4. I propose to interest the Europeans and more educated members of the Native community in the subject by actually exhibiting bees, hives, &c., and showing the several operations performed by the bee-keeper.

5. I have the honour to apply for the favour of any information on the subject the Government may possess, particularly copies of Blue Books, if any, relating to past efforts in the same direction, and I should have much pleasure in explaining further, in person, the measures I propose to take, the results attained elsewhere, and the results I might hope to attain in India.

6. I may conclude by stating that my motives are to benefit the natives of India, and not to make a profit for myself.

Memorandum by George Birdwood, *Esq., Special Assistant in Revenue, Statistics, and Commerce Department, India Office.*

Mr. John Douglas, of the Indian Government Telegraphic Department, at present on leave, writes under date 29th September last, stating that he is practically studying bee-keeping with the view to its introduction among the natives of India, "who," he states, "so far as my inquiries go, take honey and wax from wild bees only."

The subject is of great interest, and likely to prove of no little importance if once seriously taken up in India. The bee has been more completely domesticated in India than in any other country, but only in the Himalayan regions: and in all the rest of India the Natives, as Mr. Douglas observes, take honey and wax from wild bees only, simply, I fancy, because cane sugar is so abundant.

Moorcroft gives a complete account of the management of bees in Cashmere. Their domestication there is so general that in some parts of the country a provision is made for hiving them in every house as it is being built. Spaces are left empty in the walls, about 14 inches in diameter and 2 feet, the average thickness of the walls, in length, which are carefully lined with a mixture of mortar, clay, and chopped straw, and closed at the inner end with a flat tile. There are ten or a dozen of these hives built into the walls of every house. The bees are hived exactly as in Europe, but the comb is gathered differently and in a way well worth following at home. It is done by the father of the house removing the flat tile from the inner end of the hive with one hand, and at the same time blowing the smoke of a smouldering whisp of straw he holds in the other hand vigorously through the hive on which the bees at once leave the hive, and he gathers in their store of honey. He then replaces the flat tile at the inner end of the hive, and the bees, after recovering their stupefaction, gradually return to it. The same colony of bees thus produce honey year after year in the same hive, and generation after generation, and have probably done so from the original Aryan settlement of the Cashmere valley. In consequence of their being thus literally domiciliated with the human race, the bees of Cashmere are milder in their manners than those of any other country, although they have a most villainous sting when unduly provoked to use it. Their honey is as pure, and clear, and sweet, Moorcroft says, as the finest honey of Narbonne.

I have delayed putting forward Mr. Douglas' letter to enable him to recover, if possible, some correspondence of mine of about twenty years back, on the subject of the introduction of the Indian honey bee in England, and of bee-keeping into India, with a Mr. Woodbury, a well-known bee master of Exeter. The correspondence extended over years, but all that I personally remember of it was that Mr. Woodbury formed a very high opinion of the Indian honey bee for domestication in England. On making enquiry at Exeter, I find that Mr. Woodbury is dead, and that his widow is not able to trace any Bombay correspondence among her late husband's papers. His brother-in-law, Mr. Horton Ellis, of Hartwell Hall, Exeter, President of the excellent local Bee Association, has, however, sent me a valuable correspondence, extending over the years 1863-69, between the late Mr. Woodbury and Professor Jardine, the eminent naturalist Mr. Frederick Smith, of the British Museum, and the late Sir John Hearsey, of 28, Abbey Gardens, St. John's Wood Road, an enthusiastic bee-keeper and entomologist. It is not attached, as it relates chiefly to the question of the specific character of the various historical and domestic bees, Egyptian and European, and Mr. Horton Ellis was very anxious, now that the question of bee culture in India has been again raised, to have it carefully preserved. But the existence of this correspondence is here recorded, as it may become advisable to refer to it hereafter, and even to print it.

The bees in Western India, I may add, produce excellent honey, but the combs are practically inaccessible. Nothing, however, would be easier than to induce the bees of Western India, and it may be presumed of India generally, to yield their honey within reach, either by the European or the Cashmerian methods of hiving them. In Ceylon, also, according to Sir Samuel Baker ("The Rifle in Ceylon"), the bees are all wild.

Mr. Douglas should be referred to "Moorcroft's Travels,"* and recommended also to place himself in communication with Mr. Horton Ellis.

* Moorcroft and Nebeck—"Travels in the Himalayan Provinces of Hindustan."

1881.

GOVERNMENT OF INDIA.

REVENUE AND AGRICULTUR
DEPARTMENT.

REVENUE.

FROM

HER MAJESTY'S SECRETARY OF STAT

Dated 10*th November.*

Rcd. 2*nd December.*

D. No. 406.

SUBJECT.

FORWARDS copy of correspondence with Mr. John
of the Telegraph Department relating to the
tion of bee-keeping in India, together with
randum by the Special Assistant in the Reve
Statistical Department of the India Office on Mr.
letter.

D. N. M.—Home Department Press—No. 20—30-12-81—350.

Extract from a letter from JOHN DOUGLAS, ESQ., *Supdt. of Telegraphs, on leave, dated London, the 27th November* 1881.

* * * * * * * * *

PARA. 4. I should feel greatly obliged if you could give me any information on the following points, and any others likely to suggest themselves to you as important:

A.—What quantity of honey is produced in India and how is it disposed of? What price is realized on that sold or exported, and how is the remainder consumed? Is there any demand for honey, and is any imported?

B.—Are bees domesticated in any part of India, and is there any information available of the habits, yield, habitat, mode of harvesting, &c., of the wild bees? Probably the Forest Department could give valuable information.

C.—What are the varieties of bees indigenous to India likely to prove valuable, if domesticated? Do they resemble the black, Italian, or other European variety, and how are the habits of the insect altered by the climate of the plains of India as compared with the habits of bees of colder climates?

* * * * * * * * *

Circular No. 2 G.

COPY forwarded to the Local Governments and Administrations noted in the margin, in continuation of this Department's circular letter Nos. 8—412 to 422 G., dated the 20th ultimo.

Government of Madras.	Chief Commr. of Burma
" of Bombay.	" of the Central Provinces.
" of Bengal.	" of Assam.
" of the N. W. P. & Oudh.	" for Coorg.
" of the Punjab.	" of Ajmere.
Secretary for Berar to Resident, Hyderabad.	

By Order, &c.,

REV. & AGRI. DEPT.,
GENERAL,
CALCUTTA;
The 19th January 1882.

Offg. Under Secretary to the Govt. of India.

To
The Chief Commissioner
of Coorg

1882.

GOVERNMENT OF INDIA.

REVENUE AND AGRICULTURA DEPARTMENT.

GENERAL.

To

LOCAL GOVERNMENTS & ADMINISTRAT

Circular No. 2

Dated the 19th *January* 1882.

D. No. 5.

SUBJECT.

FORWARDS extract from a letter by Mr. J. Douglas on subject of bee culture and honey production in Indi

N. I. D.—Home Department Press—No. 61—21-1-82—200.

COORG DEPT. No 3

11 JUN 83

BANGALORE

From

The Revenue and Agrill Secy

Dated 27 April 1883

Received 11 June 83

Registered 11 — —

Cir No. 27 G. 4 P.C &.

4 copies of Pamphlet

Covers the replies of Local Governments and Administrations to inquiries on the subject of Tea Culture in India

Offl. Memorandum.

Copy, together with copy of the pamphlet referred to, forwarded to the Comm^r of Coorg for information and guidance, with reference to his letter No^o 27 - d. 10^th April 1882.

2. The Comm^r desires to be informed if the Comm^r of Coorg can arrange to send samples of honey and combs for the International Exhibition at Calcutta.

By Order,

Secy

Circular No. 27 G.

Extract from the Proceedings of the Government of India, in the Revenue and Agricultural Department (General),—dated Simla, 27th April 1883.

READ—

Despatch from the Secretary of State for India, No. 97 (Revenue), dated 10th November 1881.

Pamphlet containing the replies of Local Governments and Administrations to Circulars dated 29th December 1881 and 19th January 1882.

RESOLUTION.

IN November 1881, the Government of India was furnished by the Secretary of State with copy of a correspondence with Mr. John Douglas, of the Indian Telegraph Department, then on leave in England, on the subject of bee-keeping in India. Mr. Douglas, who had studied the industry as followed in Europe with a view to its introduction into this country, desired to be supplied with information regarding the varieties of honey bees indigenous to India, and the results of past efforts towards their domestication, extent of the demand for honey, the quantity produced, and the prices realised. In forwarding the papers, the Secretary of State remarked that the subject appeared to be of sufficient practical interest to engage attention. Local Governments and Administrations were accordingly requested to furnish such information as might be available on the subject.

2. The replies received comprise a large number of interesting reports by Forest and District Officers and other persons who have paid attention to the subject. As the information may be useful to the naturalist or the bee-keeper, the reports have been printed and will be made available to the public. The broad conclusions to be drawn from their perusal are—(1) that several varieties of honey bees are found in every province of India where there is sufficient forest or jungle, and that the honey of some of the varieties is good and in considerable demand; (2) that efforts have been successfully made in the hills by Europeans to domesticate Indian bees, but that bee culture is only practised by Natives in the very rudest way; (3) that it is very doubtful whether the bee could be domesticated in the plains owing to the dearth of flowers during the three or four months preceding the rains; (4) that in Southern India persons (Mr. Stormont of Bombay and others) have given up all attempts to domesticate the most common variety of bee found there on account of its intractable nature.

3. The industry is unlikely ever to be one of great importance in India. It can only be followed in the hills, where flowers abound throughout the greater part of the year, or in forests, where food is equally plentiful. In the populous country of the plains bee-keeping as a general industry seems impracticable. Under these circumstances there is little or no call for action on the part of Government. Such action could only assume the form of improving the system of bee-culture in the hills and forest region, but the Government of India does not at present see its way to taking any practical steps in this direction. Opportunity will, however, be taken of the Calcutta International Exhibition to make some further enquiries in the matter. With this object, Local Governments and Administrations are invited to authorize their respective Agricultural Departments, &c., to forward to the Exhibition specimens of honey, naming, if possible, the variety of bee by which it is produced, and the specimens will be submitted to examination by experts.

ORDER.—Ordered, that copy of the foregoing, with copies of the pamphlet of replies to the Circulars of 29th December 1881 and 19th January 1882, be forwarded to the Local Governments and Administrations noted in the margin for information and guidance, and to Mr. John Douglas for information, with the request that, should he wish to take advantage of the Calcutta Exhibition to bring forward any practical suggestions on the subject, he will communicate with Dr. Watt, the Officer in charge of the Central Office, Calcutta Exhibition, Writers' Buildings, Calcutta.

Government of Madras.
" Bombay.
" Bengal.
" N. W. P. and Oudh.
" Punjab.
Chief Commissioner of British Burma.
" Central Provinces.
" Assam.
" Coorg.
" Ajmere.
Secretary for Berar to the Resident at Hyderabad.

Ordered also, that a copy, with copies of the pamphlet referred to, be forwarded to the Foreign Department for circulation to the Residents in the various Native States, and to the Press Commissioner for distribution to the public Press.

(True Extract.)

For Secretary to the Government of India.

To
The Chief Commissioner of Coorg.

1883.

GOVERNMENT OF INDIA.

REVENUE AND AGRICULTURAL DEPARTMENT.

GENERAL.

RESOLUTION.

Circular No. 27 G.

Dated Simla, the 27th April 1883.

SUBJECT.

Reviews the replies of Local Governments and Administrations to enquiries circulated on the subject of bee culture in India.

Govt. C. B. Press, Simla.—No. 96 R. & A. D.—28-4-83. 500

Old Records.

File No. 27

Collection No.

19 .

Office of the Chief

Commissioner of Coorg

Bangalore.

Pros. Serial Nos. 1-5

Books and Publications — Subject.

Copies of 'Finances and Public Works of India' by Sir John Stratchey a and Lieut.General R.Stratchey(s.1)
Copies of 'Ledger Record' by Dr.G.Watt compiled in connection with the preparation of Dictionary on the 'Economic products of India'(s.2)
Printing and supply of monthly Proceedings from August 1884(s.3)
Rules for regulating the purchase of books and newspapers and other periodical publications at the public expense(s.4)
Supply of all periodicals, special administration and Scientific Reports for presentation to the Northbrook Indian Club and to the Smithsonian Institution(s.5).

Previous References.

Later References.

(26)

S. 97.— Green).

MFP—2158A P—(M-245)—21-6-34—30,000.

Table of contents. File 27 of O.R.

Endorsement No.C/224 dated the 17th May 1882 from the Government of India, Home Department forwarding a copy of letter No.24 dated the 16th February 1882 regarding work entilted 'Finances and Public Works of India' by Sir John Stratchey and Lieut. General R.Stratchey requesting should copies of the above be required the necessary steps be taken to get them(s.1)

Government of India circular letter No.13 F dated the 5th September 1884 forwarding a copy of Economic Products of the economic plants described in Stewart's 'Punjab Plants' compiled by Dr.G.Watt(s.2).

Government of India, Home Department circular No.14 F dated the 8th September 1884 authorising the printing bindingup, and circulating tne volumes of Proceedings commencing with the volume for August 1884(s.3)

G of I, P.W.Department circular No.IC P.W. dated tne 19th September 1884 regarding rules for regulating the purchase of books and newspapers or otner periodical publications at the public expense.

G of I, Home Department letter No.943 dated the 6th July 1885 requesting that a copy of general administration reports and also such reports otherA than purely Departmental Reports containing matter of permanent importance be forwarded to Secretary of State for the use of the Smithsonian Institution, Northbrock Indian Club, and the Yorkshire College, Leeds(s.5)

India Office. London 16th February 1882

To

His Excellency the Most Honorable
The Governor General of India in Council

My Lord Marquess,

Res of commun
No 24.

I request to be informed whether any copies of the work entitled 'Finances and Public Works of India' by Sir John Strachey and Lieut Genl R Strachey have been, or will be, ordered for your Government through local Agents, or whether it is your Excellency's desire that copies should be obtained and forwarded by this office.

I have the honor to be &c
Hartington

No 224

Copy forwarded to the Chief Commissioner of Coorg with the request that if any copies of the work are required the necessary steps may be taken to procure the required number

By order
H. Lee-Lees Colonel
Offg Secy to the Govt of India

to Department
re- Books &c
Wellesley 17th May 1882

1882. No.

From

off: Lieu. Leey
In charge, Home a
H-Colle

No C/224

Dy 17. May 1882
26 — "

Forwarding copy &
letter from Secy Govt
for India N° 24 d 16
1882, & requesting
should copies of
"Finances & Pub
works of India" be
Lt. J. & Lt. Sd. R.
Strachey be req:
the necessary step
may be taken to
procure them.

No 393 d/27 May 188

No. copies are requi
by this Office.
Transferred to the
Public Works Depart
By order
Signa
Secretar

Circular No. 13F.

FROM

G. S. FORBES, ESQ., C.S.,

Offg. Under-Secretary to the Government of India,

To The Chief Co.

Home Department
Forests.

Simla, the 5th September 1884.

SIR,

IN continuation of the Circular letter from this Department No. 9 F., dated the 25th June last, I am directed to forward, for transmission to the Conservator of Forests, a copy of a 'Ledger Record' of the economic plants described in Stewart's "Punjab Plants," compiled by Dr. G. Watt, in connection with the preparation of his "Dictionary of the Economic Products of India;" together with a copy of the preface written by that officer to the series of such works.

I have the honour to be,

SIR,

Your most obedient Servant,

Offg. Under-Secy. to the Govt. of India.

To the Secretary to the Government of Madras.
" " " Bombay.
" " " Bengal.
" " the North-Western Provinces and Oudh.
" " the Punjab.
" Chief Commissioner of the Central Provinces.
" " British Burma.
" " Assam.
" " Coorg.
" " Ajmere.
" Resident at Hyderabad.

1884.

GOVERNMENT OF INDIA.

HOME DEPARTMENT.

FORESTS.

To

THE INSPECTOR GENERAL OF FORESTS TO THE GOVERNMENT OF INDIA.

No. 647 F.

Dated Simla, the 8th September 1884.

SUBJECT.

Authorises the printing, binding up, and circulation of the volumes of his monthly Proceedings, commencing with the volume for August 1884.

C. C. H. Press, Simla.—No. 161 H. D.—9-9-84.—270.

[*For Heads of Departments.*]

Circular No. IXP.W.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

GENERAL.

Simla, September 19, 1884.

The following is forwarded to the Local Governments, Administrations and Officers marginally noted for information and guidance.

The Governments of Madras, Bombay, Bengal, the North-Western Provinces and Oudh, and the Punjab, in the Public Works Department.
The Chief Commissioners, Central Provinces, British Burma, Assam, and Coorg.
The Resident, Hyderabad.
The Agents to the Governor General for Central India, Rajputana, and Biluchistan.
The Accountant General, Public Works Department.
The Inspector General of Military Works.
The Consulting Engineers to the Government of India for Guaranteed Railways, Calcutta, Lahore, and Lucknow.
The Director, Persian Telegraph.
The Director, Persian Gulf Telegraph.

Also to the Directors General of Railways and Telegraphs, and the Director in Chief, Indo-European Telegraph, with intimation that the Government of India is pleased to invest them with the powers of a Local Government for the purposes of the Resolution.

By order,

Under-Secy. to the Govt. of India.

No. 2930 Accounts and Finance / Stores, dated 25th August 1884.

RESOLUTION—By Government of India, Department of Finance and Commerce.

Read again the following papers, *viz.* :—

Resolution No. 2339, dated 30th August 1872 (Expenditure Proceedings, October 1872, Nos. 1—4).

Resolution No. 2367, dated 16th November 1875 (Expenditure Proceedings, December 1875, No. 1).

Resolution No. 1359, dated 1st July 1878 (Account Proceedings, December 1878, Nos. 877—884).

Resolution No. 1548, dated 9th July 1879 (Account Proceedings, July 1879, Nos. 516—519).

Resolution No. 185, dated 10th January 1883, paragraphs 13 to 19 (Account Proceedings, January 1883, Nos. 3—6).

RESOLUTION.—The rules for regulating the purchase of books and newspapers or other periodical publications at the public expense are now contained in various orders and circulars, some of which are of old date and apt to be overlooked. It has therefore been considered desirable to consolidate them, and the rules in the succeeding paragraphs should in future guide all such purchases.

2. These rules apply to books or newspapers purchased at the cost of the Imperial and Provincial Revenues and of Incorporated Local Funds, but not to those purchased on account of excluded Local Funds.

3. Books and newspapers or other periodical publications, whether published in or out of India, shall not be purchased or subscribed for at the public expense by any public officer without the previous sanction of the Local Government, or, in the case of officers under the Government of India, of the Department of which the officer is subordinate.

4. Books for regimental schools, regimental and prison libraries, and military offices will, so far as the requisitions are in accordance with the rules in force in the Military Department,

be brought under the orders of the Government of India in the Military Department for the Bengal Army, and of the Governments of Madras and Bombay for the armies in those presidencies.

5. Books for the Educational Department should be obtained under the present rules and usage of the several Local Governments concerned.

6. The officers of the Account Department are enjoined to require proof of such sanction before admitting charges of this character.

7. Government does not undertake to supply books and newspapers indiscriminately, and supplies must be confined to what is found actually necessary for the public service independently of the desire of officers for improvement on subjects connected with their duties. Purchases of hand-books, manuals, practical guides, and the like should be rarely, if ever, made for executive officers, but mainly for officers charged, among other duties, with important deliberative duties of advising Government on special or important subjects.

8. Commentaries or annotations on Acts of the Legislature will in no case be supplied by Government.

9. Directories and works of a cognate character can only be allowed under special circumstances where there may be evident inconvenience to the public service if they are not at hand for reference.

10. Official publications issued in India, such as the Postal Guide, the Civil Lists, the Codes of the Financial or Public Works Departments, the Army Lists, &c., are to be supplied only under instructions from the Local Governments or Departments of the Government of India. No payment should be required for books of this class.

11. Official publications* (other than Parliamentary papers) published in England should be procured by the Departments of the Government of India, and by the Local Governments and Administrations requiring them for their own use and for the use of the officers subordinate to them, by indents forwarded to the address of the Assistant Under-Secretary of State for India; the revenues (Imperial, Provincial, or Local) to which the cost is chargeable, and, if Imperial, the head of account or grant to which it is debitable, being specified in the requisition.

* The following are not to be considered official publications :—
Acts of Parliament (except Mutiny Acts, which the Secretary of State will supply).
London Gazette.
War Office Army List.
British Postal Guide.
British Code List.
Royal Navy List.
Mercantile Navy List.

12. Parliamentary papers required for departments and officers elsewhere than in the presidencies of Madras and Bombay will be supplied as published by the Secretary of State to the Home Department of the Government of India under the terms of his Despatch No. 5, dated 13th January 1876. All communications regarding their distribution should be made to the Secretary to the Government of India in the Home Department.

13. Parliamentary papers required by the Governments of Madras and Bombay should be obtained direct from the Secretary of State.

14. All books and periodicals procured for any office should be registered or filed, and must not be permanently removed from the office for which they were intended.

15. Payments for books, newspapers, and periodicals procured from abroad should by preference be made in India either through an agent or a bank on bills drawn by the supplier. When this is not practicable, the remittance should be made invariably through the Local Accountant General and the accounting officers of the Military and Public Works Departments, who should be responsible for the purchase of bills.

ORDERED, that the foregoing Resolution be communicated as follows :—

To the Public Works Department† and the other Departments of the Government of India.

† Original papers returned.

To all Local Governments and Administrations.

To the Comptroller and Auditor General, the Comptroller of Indian Treasuries, and to all Accountants General and Comptrollers.

To the Head Commissioner, Paper Currency.

To the Mint Masters, Calcutta and Bombay.

To the Director General of the Post Office.

To the Commissioner, Northern India Salt Revenue.

J. E. O'CONOR,
Asst. Secy. to the Govt. of India.

To The Chief Commissioner
Coorg

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

GENERAL.

To

Circular No. IX P.W.

Dated Simla, September 19, 1884.

Received

Rules for regulating the purchase of books a newspapers or other periodical publications at t public expense.

Govt. C. P. Press, Simla.—No. 167 P. W. D.—5-10-84.—1,024

No. 943

FROM

CAPTAIN W. J. B. BIRD,
Asst. Secy. to the Govt. of India,
in charge Home Dept.

To

The Chief Commissioner of Coorg.

Home Department.
Books.

Calcutta, the 6th July June 1885.

SIR,

I AM directed to forward herewith copy of a Despatch* from Her Majesty's Secretary of State, and to request that you will be good enough to forward to the India Office for the use of the Smithsonian Institution, Northbrook Indian Club and the Yorkshire College, Leeds, a copy of the general Administration Reports and also such Reports, other than purely Departmental Reports, containing matter of permanent importance that might be issued from time to time.

* No. 38 Public (Records), dated the 9th April 1885.

I have the honour to be,

SIR,

Your most obedient Servant,

Bird Captain,
Asst. Secy. to the Govt. of India,
in charge Home Dept.

I. C. D.—Government of India Central Printing Office—No. 45 H. D.—1-7-85—75.

351

S. 175

From The Asstt Secy.
In charge, Home Dept
Calcutta
No 943 E.I
4 S.C

Dt. 6 July 85
Rec'd 14.

In forwarding copy
Secy. of State's Desp
No 38 dated 9th ult
1885, requesting that a
of the general Administ
tion Reports & also Sa
Reports, other than pure
Departmental Reports,
containing matter of p
nent importance, re
warded to the Secy. of
State, for the use of the
Smithsonian Institution
Northbrook Indian Clu
& the Yorkshire College
Leeds.

* Other Admn Reports

We do not think any of the 3 first
mentioned. If ordered 3 copies
be sent for them to the Secy of State
the usual 60 copies (35) sent to
But as mentioned before, unnecessary
unnecessary to do so the Secy of
not being of general or permanent
Bph 20/7.

I do not think we need
send any. Hume 20/

No. 38 Public (Records), dated India Office, London, the 9th April 1885.

From—Her Majesty's Secretary of State for India.

To—His Excellency the Right Honourable the Governor General of India in Council.

I observe from your Proceedings in the Home Department (Books and Publications) for September 1881, that you have given instructions to the several Local Governments to send home "two copies of all periodicals and special administrative and scientific reports issued by them," for presentation to the Northbrook Indian Club and to the Smithsonian Institution.

2. In this order reference is made to my Despatch, Public (Records) No. 42, dated 21th July 1884, but I must draw Your Excellency's attention to the fact that it goes far beyond the instructions contained therein, which were to the effect that a selection should be made of such reports "as it might be deemed desirable to send to those Institutions," and not that copies of all Reports of a certain character should be sent home.

3. Acting upon your orders, the Bombay Government have recently transmitted to this Office copies of their Reports on the state of crime and working of the Police in that Presidency for the year 1883.

4. I question, however, whether purely Departmental Administrative Reports, which are usually of only passing interest, would be much appreciated by those Institutions. These gifts should, therefore, be limited to such Reports as are of more general and permanent interest.

N. C. B.—Government of India Central Printing Office—No. 43 H. D.—1-7-86—250

Old Records
File No. 28.

Collection No.

19 .

Office of the Chief
Commissioner of Coorg
Bangalore.

Pros. Serial Nos. 1-

Subject.

Boundary

Inclusion of Sampaji with Coorg limits.

Interference of the Tahsildar of Umr Soolay with the inhabita
of Sampaji forbidden.

Previous References.

Later References.

S. 97.--Green).

MFP—215S&P—(M-245)—21-6-34—30,000

Table of contents. File No.28 of O.R.

Permission to Inhabitants of Umr Shoolay to pasture, their cattle, to procure leaves for mannure and pursue wild elephants within the Sampajay jungle refused.

Boundary line between Coorg and South Kanara. Inclusion of Sampaji with Coorg limits. Interference of Tahsildar of Umr Soolai with inhabitants of Sampaji ~~xxx~~ forbidden.

[illegible]

Old Records

File No. 30

19 .

Collection No.

P-1-34

Office of the Chief

Commissioner of Coorg

Bangalore.

Pros. Serial Nos.

Subject.

Bridge

Construction of Chorunhulla ----on the Mercara-Kodlipet Road.

Previous References.	Later References.

S. 97.—Green).

MFP—2158&P—(M-245)—21-6-34—30,000.

~~[illegible]~~

Choramballa Budge

[illegible]

[illegible]

29/5/11

29/5/11

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Class for telegrams — Ordinary / Express / Urgent* / Priority / Clear Line† — *Only for Foreign Telegrams. †Not for Foreign Telegrams.

No. Dated

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams)

S. S.

MGIPC—S1—168(Genl)MFP—(M.1993)—7 5 34—50 000 Pads.

Office Note.

Cholumbully Bridge.

on Mercara Kodlipet Road.

No 65 d/20/2/82 V
Report

E.E submitted for early sanction an Estimate for Rs 1415 for Repg the above Bridge as it was in very unsafe condition planking having decayed

S.E No 991 d/4/3/82

Capt: Kensington cut down the Rates for laying and painting & sanctioned the Estimate for Rs 1298 and granted an Appropn of Rs 1055. Of this sum only Rs 256/4/8 were spent in collecting Materials upto end of March/82 of the balance lapsed.

say that the work is
cannot be done & returns
laying & painting
it may be omitted
for the present
ork if there is no plan
Bridge for me to see
to enquire if the Rs named
ther referred to by Mr
ays is Rs
E.E No 216 d/22/8/82

E. E now solicits fresh sanction for the balance of the Estimate for Rs 1042 which amount was appropriated in June/82

Madras Mail

d/20/6/82, the un-
-safe condition of and
the closing up of the
Bridge for traffic
were noticed. Extract
of as sent to E E
& this has since returned
with explanations.
These papers are
also put up as
they bear upon the
subject

Office Note

Supdg Engrs queries and Executive Engineer's answers on Extract from Madras Mail re the D. S. W. in Coorg.

1. Bridge at the [illegible] of [illegible] Road [illegible] [illegible] [illegible]

[illegible]

The Report attached to
Repair Estimate received
with No 658/11/2/82 Ex Engr
states that the Road
appears to have been
completed very hastily
in 1878-79 and the planking
not having been made
of well seasoned wood
has decayed. Rs 850 is
provided for planking the
Repair Estimate.

[illegible]

Closed for 4 Months
to end of May 1882.

[illegible]

There is the Chittamkudi
stream on 19th mile from
Cuddalore Cuddapah Road

[illegible]

Yes (Vide Ex Engr No 65
dated 11/2/82.

[illegible]

Mahdapew and Nuttly rivers on the 10th & 12th miles respectively of the Berea and Ruddlespelt Roads, crossed by causeways in fair weather and by single and double boats during [illegible]

[illegible] of [illegible]

Double boats at the Nuttly rivers were properly repaired, and were ready for use whenever required, but the Contractor allowed them to be dismantled.

[illegible]

It was filled with rain and consequently sunk. The river water did not leak into it. Mr Sharpe was acquainted with this and declined responsibility. It will be impossible to get

get them to float till your
subsides. There is a single
boat working now.

[illegible] the Seeonda River
[illegible] has been connected with the
[illegible] Canal by a cut
[illegible] that [illegible]
belongs to the Govt. of
[illegible]

One boat belonging to
the double chain at the
Sadapoor River was found
to be rotten and arrange
ments are being made to
purchase another: the
double boats will be put
in working Order early
[illegible] there will be no difficulty
[illegible] but it is [illegible]
[illegible] to the depth of
[illegible]

See chance
[illegible]
[illegible]

The monsoon burst
early this year, and it
rained for 15 days almost
unceasingly. The Chinsurah
Hills keep it in and
uninhabited and unhealthy

unhealthy locality. Sunken was ready but there has been great difficulty in getting labour. Mr Sharpe directed Mr Martin's attention to the bridge, and he is proceeding vigorously to put the works in hand. The Muddy boats were repaired in time. The Hundred boats were in good working order last year. It was suddenly discovered that one of the boats was made of inferior wood and became rotten. Steps are now being taken to remedy this.

Inspection Notes - Newcastle-Inverell road

I have seen now for the first time the portion of this road lying between the 3rd & 11th and 13th mile at Jundoor - Much of it has been judiciously worked with the scrub cutting; in many places particularly in the 4th and 5th miles where it passes through Coffee Scrub are several open drains and log bridges, and the road is mostly formed of the soil immediately adjacent in the neighbourhood which in any case at present moderately firm packs the road being a stiff plastic clay that in the absence of any wheeled traffic temporarily the impression was created that much water - Several working moves are now much needed and at such places the line is narrow often not more than 40 links -

As the road advances towards Inverell & on the crossing the Gundle Scrub is met with 10th miles the road the metal line is known and is very firm up to the present point

The Hatty runs in the 1st mile on the Newcastle side Glencoe has a good log bridge & a stiff [illegible]

Causeways — and [illegible] Same of the
minor Streams have massive
bridges — Altogether a great deal
of work was executed under the original
Estimate, and it appears to me that
we shall be in many years have to
accept the Line as it stands with a
considerable deficit - 20 being the
to standard as a metalled Line
with its two remaining Streams bridged
he would not cost much under £2 a

The bridges from [illegible] of
programme but with the [illegible] of the
and are indeed necessary to allow of
road being traversed during the [illegible] of
minor matters with metal. [illegible]
turn should I think be attended to
it be the widening embankment to secure
a minimum width of 15 ft - In
places it is only now 10 or 11 ft.

The Surface I found in the whole
and in several places very Good, and
taken as a whole very pleasant for traffic
at this Season — but as in other lines
the works of maintenance consisting
clearing Grass & Side drains, dressing
surface, bridges, banking &c
being carried on [illegible]

[illegible] as under to [illegible] from a [illegible] in the
Memo I have been obliged to refer
the Asst. Surveyor in Charge to the
Chief Commissioner and recommend a
reduction of his charge

In passing the Causeway over the
Hatty river I was enabled to satisfy
myself as to Several of the facts connected
with the late Criminal Prosecution by
Sub-Overseer Narasingrachariah —

Mr. Ramatzlei's conclusion that the
old causeway had not been repaired
as Estimated, dismantled and rebuilt
from the bottom is clearly proved by the
fact that all the small bad work of the old
Structure has now washed in the two
Cavities in the down Stream Side, and (?)
by the present Causeway following the correct
line of the original work instead of having
built a Transept across the Stream

There are again no Such holes down
Stream as it was contemplated by the
down in the Expense book necessary to
dismantle Stone by Stone the old work — I
have no Such contrast in the Stream
and only a few of the lower Stones in
the best Coursed Facing were taken
in any two Courses —

In approaches to this and the other Causeways should have their Roadways flattened and also the curtain walls at both sides bell-mouthed and widened so as to allow of more free to carts when crossing - The Roadways could also with advantage be given 2 coats for lessons of Summer

The Romantic Rd should take all the Opportunities afforded him by crossing the Harting and Marchfarm Streams Levels by half a mile above & below present Causeways & cross Sections taken to ascertain of a decision being come to as regards the up the future bridges, the first of which to require 3 Spans, and the second 2 Spans 60 ft — In both cases Piles with round bottom ends to be found -

In present state of Spending the maintenance allowance in (1) cleaning and drains throughout each year (2) burning up one fourth of the entire length with best procurable material (3) keeping the bad bridges (4) building 8 or 10 roods of drains each year, has any effectual - is really wanted however is strict attention on the part of the Subdivision Labourers to the orders received, but of this and present circumstances I am by no means Sanguine for the entire Effectiveness of the present rates in Charge. The Roberts

In Chamundella bridge I found
to have its abutments & wings well
advanced and the cut stone being fitted
for the lower courses of the arches, viz -

With reference to the front of the Embankment
(Vide the piers & abutments should be ready
to receive the centres on 15th January, and
some brick of good quality were are available
even today for the piers turning & invert of
the four ribs in another time - the Robbins
has been to dilating about the centres, but
nothing has been done towards, putting the
together - but the delay could be rectified

The mortar employed of 1 lime & 2 surkhi
and 1 sand has set remarkably well &
I should expect on better results for the
more long used, lime to 2 surkhi as can
be most of the latter with 1 sand added

So far therefore the work need not unduly
be delayed I however doubt the quality
the bricks which are tested in these second
class ambitions after the hammers were
easily crushed, and I fear with care in
charging become unavailable for the arches

The formation of the hornwork covering
seat this point, and should be put first
forgetting satisfied I am ...

of a trimmer class of bricks, with less
some more sand added, and more
strongly fired than the bricks now in
stock have been

Under these circumstances, and as it is of
the greatest consequence that we should be assured
certain about our materials, I think it
can be of no use to enter into the consideration of
them & instead of the bricks this year —
with the view to use them hereafter

On the 10th inst. I entered my journal
from Lanarkshire in the 26th mile on the
Glasgow road.

Passing the entire mine I came at
to the environs of the Lanarkshire coal
Lodge, and sanctioned the early erection
of a room, being a stable, but besides this
is my desirable that the water supply should
be improved. This is a matter which
is represented as by the Coal Engineer as being
considerable importance to the spirit of
travelers

The road after leaving the Lanarkshire
lies in a direct line, and then falls at much the
steep a gradient for nearly 2½ miles to the
lowest bend after Bothwell bridge —
diminishes a distance of nearly the whole of
which might be seen it will be of
favour to effect the extension a change of
direction to this [illegible]

embankation would have to be raised in
order cut-through, the present line on its
present location being closely hemmed in by Estates
on both sides -

In the same way the portion leading down
to the bridge near the 30th mile is unsuitable
steep -

At the 31st mile Capt. S Clarke now have
to condemn a big through Sanctuaries, and
make it a substantial 2 mile instead of
1 3/4 mile by existing road taken 1/4 mile in the
present State it matters it is doubtful if it
would pay to form it

I noticed that these work have carried
work in excess of the maintenance repairs
near 32nd mile stone - The metre tables are
no more flat enough in the commencement of
traffic, and the travelling of the road surface
is mostly unsound - The side-drainage is
much to blame for these errors reaching which
it appears to have received especial attention

Beyond the point mentioned a little, road
requires repairing and an extensive treatment
round requires portions raising, widening &
formation

In the 34th mile there is a torturous piece
of road over bad soil leading up to an abrupt
turn at the end of a low land slip which
requires to be regularly taken in hand & dealt
with - By cutting away 5 or 6 feet more
soil and dressing the latter outwards at
least 10 ft more in width of road could be
formed — The [illegible]

have a good revetment built of the stone which is readily procurable in the neighbourhood and the earth at the Stafford Lock and Embankment with brick coping & cesspools at the

Signed Sir. with the road to Lan[illegible] takes off to the village with part of the Lanemarsante - Denigal [illegible] repairing which a report with a plan came up from the Asst. Engineer - Bann with Suffrie & Observe book & letters the Centre of the Embankment line which has been, and also of the Site of the Intake [illegible] over the "Manmanwater" river

Capt. Wagon
R.E.

Office of Asst Engineer
Ballymena
Sir
I have the honor to report for the information of the Commissioners of Public Works in Ireland that I have this day inspected the Ballymena Water Works, which are in the following state

[illegible]
[illegible]
[illegible]

Inspection Mem: by Col: Sankey R.E.
Chief Engr of Ayrshire, dated 11th Dec: 1874.
on the Mineral-Railway Bridge

29/1/75 Read the Mem: by Major Gen: Hutt
Inspecting Officer of Railways - with
Sir Richard Macdonnell's Report thereon
on the work of the Shewanbulla Bridge
as still so Incomplete -

Cu

Dec: 1874

Chowringhee Bridge —

Col Sankey was of opinion that an iron girder bridge of one span would be more suitable, & considered that 48 ft. span would be sufficient. The question of the sufficiency of this should, however, be fully cleared up. From the section it would appear to be insufficient. —

Mr Curtis' major years read. The rise of centre arch is not enough, the piers are very weak, & the waterway is greatly obstructed. 2 ft away & the stream would not be sufficient, as wide & flat as arch —

I would, as recommend the section, under design, but suggest to Mr Lawrie & ask him to explain how the stream, with piers in use of the 1st instance is regards the scour records.

The work is provided in Imp Budget for 71-72

Ch Rivers
Capt
21-1-71

19-12-44

Off. Engr Engineers.

I concur that the Blanks design is unsuitable, the piers should be abutments, with the semicircular side arches do very little towards resisting the thrust of the centre arch in the centre. One of the piers is placed in the deepest part of the stream

which is objectionable. I should
would be advisable to confine the
stream to a width of 45 ft., as it
leaving, and has probably a great
velocity. This point however should
be satisfactorily cleared up by the
by-laws.

From the information before
I should recommend that the appli
tion be refused and the anchor
be allowed. The by-laws should
be directed to be amended into such
the suitability of the position
upon this application, and that the
fee

2/9/71

For Chief Engr. orders

Chowtuttee Bridge

The annual Estimate for this bridge has now risen up from Rs 12,00 to about Rs 18,000
Of this increase about Rs 7000 is due to the cost before of iron for brick and the balance to new approach unprovided for in original Estimate and to increase in rates. Said Mr Jones considers to be necessary in consequence of the difficulty in procuring labor in the locality.
The cost also of erecting the brick arches upon of course naturally supports itself but even if the piers already ordered were built up and for by Degrees it is questionable whether or not these brick arches in such a situation be the most eligible amount of Estimate & Mr Jones requests and ask his opinion
If can be obtained certain small Reductions might I think be made without sacrificing efficiency thus the stone bed plates need not be more than 1 foot thick ~~and would save the~~ cost of these Rs 200 would be saved Rs 800 is allowed for metalling roadway and approaches which is not absolutely essential and could at 10 annas only be obtained

in 1841 Engineer for instead of 1200 as planned by

I note that the rate for supply dressed stone for
contractor Rs 3½ per Cft and for local Khadis Rs 4 is
unreasonably high. We pay Rs 2 per Cft for
dressed stone chips in Bangalore and Mysore
and nothing about 1 Rupee is the rate for
khadis that stones work in the Bangalore Distt with
Rs 1½ for stone stones and any difficult work.
The difference in the rate I pay does not justify
like accounts for the difference in rate

23-9-78

23-9-78

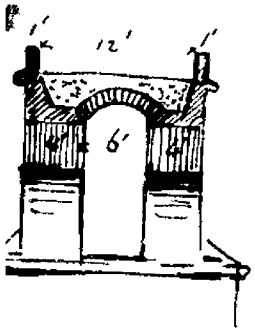
23-5-

Memo on the Irrawaddy Road
Estimate for the Chaungbulla bridge

If we had ample funds to deal with
in every I would not hesitate on a
matter of humanity if nothing else to
endure at any cost to the use of
iron girders in that work but there
is absolutely no room for other than
purely economical considerations with
our present restricted funds

If then we can build brick arches at
a sensible saving to Government we are
I consider bound to do so

The original Estimate for the brick
arches amounted in that item alone to
Rs 1662 being 40 900 cft. @ 6½ annas - the
The quantity can be reduced in two
ways — We may limit the Clear
roadway to 12 feet - and further build
the arch in two Segmental ribs each
4 ft. wide with either a covering arch in
the central void as shown in the
transverse section in the margin
or with Slabs of Stone or joists
of wood as may appear cheapest
In addition to the economy
of cost an [illegible] in bulk



in 1461 square ft. instead of 1200 as shown by

This amount would add
of one great advantage i secure
by the number of district Jails with
which the work is thus broken up,
of which being complete in itself an
admit of being of necessary extension in
as labor and season invited — Thus
Prisoners only a hundred of one description
be a single Jail still that would
Do much work to the Good — A
Such would in no case have to be
Sacrificed — The cutting in a
Pile once Brick made should a
answer for all —

The following remarks [illegible]
be deemed [illegible]

The length of the approaches, which are estimated
need Rs 3000 might be reduced considerably by the
entire length at Short the cost may would be saved
Abutments and Piers being also lengthened if considered
desirable —

The estimate however for these approaches & are Rs 8000
& omitted and grant substituted

25/9/74

For Chief Engr orders

Estimate of Rs 76000 for bridge across Chowkidulla stream on Lobdapatti Road

An item of Rs 10000 for 2 iron bays has been provided in the Budget for bridging this stream but after some correspondence the Executive Engineer was directed to submit an estimate the cost of a bridge of 2 - 30 ft masonry spans the designs for which were prepared in this office He objected in no respect from the designs submitted by Land Clerks except in the thickness of masonry - The waterway remaining the same In calculating the waterway required Land Clerks states that the rise of the arch above the site of the bridge is 1 in 70 for 1000 feet and that there is an abrupt rise of 10 or 20 feet this would give a slope of at least 33 feet in 1000 or about 100 feet per mile but in calculating his waterway he has taken the slope at 20 feet per mile

I confess myself unable to follow the calculations given by the Ex Engr as waterway required and as they cannot be entirely reconciled by the above clerical error it is not necessary that I should do so

I make the area of the waterway of Arch area in 1461 square ft. instead of 1200 as stated by

Grant Clarke. This would make the total water
way allowed 76 ft. against the 700 sq. ft. of
cross sectional area of measured flood.
If the full five miles were undertaken instead of
10 feet per mile and we were certain that it
is really the highest flood which can occur
these sections we have, the extra $\frac{1}{10}$ th (round)
of waterway provided would suffice but the
total width of the channel will be reduced
from 88 $\frac{3}{4}$ to 60 and it will be flowing 16 ft.
deep instead of 8 before the whole of the vents
can come into action I do not consider
the two 80 ft. vents sufficient.
I would therefore suggest that the Labrouste
be altered in this way to 2 - 40 ft. vents and
sanctioned - The amount will still be
within the Budget Estimate

W 25/10/71

Cjdrummond
27/10/71 Att

Schmidt

F. Schmidt & Haensch

To the Chief Commissioner

for Orders

Revised Estimate of the cost of the Chorakhalla Bridge, Kodlipet Road Coorg

Capt Bowen's note enclosed explains the state of this case — Rs. 10,320 were sanctioned for this bridge, Masonry of 2 rib arches of 40 ft. span each. It was found that foundations could not be made there & Col. Saulez directed it to be taken in Sections — the materials Capt Bowen proposes to use from Alleppi Middle of Bonta Rs. 2 have been delivered leaving a balance Rs 6831 — All that remains is to Land them & Coorg Breach them. The estimates & the

Plans are all ready.
The Revised Est. is Rs 19878.
& the work is nearly finished.
The money nearly spent—
Sanction is solicited to the
Estimate.
Allowing very largely for
the difficulties attending
work in the forest & parts
I cannot consider
Moorg.
this transaction otherwise
than discreditable to the
D.P.W. Both as it was
all done under my
predecessor I could
neither not criticize it.

C C C—

5/4/78—

The transaction is
evidently discreditable.
But the bridge must
be built, hence the matter
also purchased and
the Revised Estimate
must be sanctioned.
The difficulties re

the matter of Moorg
are well known
as also those con-
nected with the embankment
of portions of the
Canal not entirely
in the reasons
for explanations
should had with the
Case and how it
the transaction
will have borne
not very creditable
Chamarlin when
here.

W.F. 6/.

Sanction Re 2.2 ?
= 1 ?
? ?
? ?
?

NOTES AND PRECIS.

S. C.—R. P. B.—8-1911.—1,500.

Estimates -

The Amount of Rupees 6,000 would afford sufficient to complete the work, and to that Effect Some has been set aside for its special Appropriation. The work will be capable of being commenced and Completed within the Year, 1871-72.

The Bed of the said Stream, & Banks & Borders, as they now Naturally in Landing & Rain and Flood Coming over the Lands and Fields is extended -

The Mean Water Mark Transverse Section shewn on the Plan taken that Section for the Springing Arch of the New Arches -

The Entrance or Mouth Arch is to be 2 Spans that Form of 40 Semi Circular to Radius being 36' or 35' 5" -

The Smaller or Exploring Arch next is Semi-Circular of 20 ft. Radius.

The Waterway or Sectional Area of River Bed at Sites, about 600 Sft, and

in the case of this design, provision has been made for 760 Sq. feet of Waterway, but if the Chief Engineer should consider that insufficient, there would be no great objection to the Springing Lines of the Arches being raised 3 feet, which would allow of an additional 200 Sq. feet of Waterway.-

In order to reduce the cost of the Structure the Roadway (between Parapet Walls) is only to be 12 feet in width which is sufficient for the Slab of Roadway to which the Reinforced Concrete Road Ballast.

The ends of the Abutments are to be splayed to a Head which will include the curve Guard Railings. In the Plan it is proposed to construct Recesses of an Circular form, splaying outwards and through the Complete breadth of the Bridge, to permit of an Escape for the water should an unprecedented Flood occur at any future date.

Meeting this day with the general Assembly of the Presbyterian and that it may be duly selected as the Place of Worship to be understood during the year 1871-72.

Lew the Honor to be

Your Obedient Servant

Executive Committee

Secretary

Estimate for Commissioners Roads

	Amount
Brick work.	3702 " "
Blasting	200 " "
Plastering	200 " "
Embankments	70 " "
Curbing.	80 " "
Grading & Formation of Roadway	200 " "
Contingencies	130 " "
Total	4700 " "
Retaining wall	500 " "
Culverts	1/2 of " "

Public Works Department

No 336 / 2067 1870

From The Executive Engineer Dharwar

To The Chief Engineer of Mysore

Dated

Despatched

Received

Enclosures No

Subject

For orders

Comps Design & Estimate for Thavanihalla Bridge

Mr Clarke

The design does not appear altogether suitable. The rise of Comp centres is heavy & insufficient, & the piers (which would be in string in abutments) — actually "To" work —

The bridge is stated to give 70 sq. ft. of waterway, but there are in the work segments which should not be calculated. There does not appear to be 70 sq ft up to springing —

The watershed is estimated as 2 sq. miles. Tenders should be called for, & the ability of the tenderer for undertaking such a work should be ascertained.

E.C.

16-11-70

Approved

26.11.70

DEPARTMENT.

BRANCH.

Draft

Letter
Memorandum
Telegram

Ordinary
Express
Urgent*
Priority
Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

Class for telegrams

No. Dated

To

To be issued on	Issued on
1st Reminder	
2nd Reminder	
3rd Reminder	
Heading :	
Case or Diary No.	
If post copy of telegram required	
Date of despatch of above	
List of enclosures	

(Code word for telegrams)

S. S.
NGIPC—S1—168(GenI)MFP (M-1953)—5-3-34—50,000 Pads.

1280 Co. Grainger Lyle.

Ques. re P.W. workshops - Headcorn.

Sir,

I shall feel much obliged by your furnishing me with a plan & profile of the proposed line of railway from the Ashford & Hastings railway at Headcorn to Tenterden, with an estimate of the cost at which you are willing to undertake the work. It is considered important that the boundary of the town plan should include the whole of the district likely to be required for railway purposes for the next 20 years. Your immediate attention to this matter will be much esteemed by the Directors.

I am Sir
Your obt. Servt.

Chas. Ashby

Col.

15-11-70.

Remarks
Cent
1/12/20

Public Works, Workshop Department

Chepauk, Madras, 17th December 1870

No 1496.

From J. N. Grainger Esqre
General Superintendent
P.W. Workshops and Stores.

To The Chief Engineer
Mysore
Bangalore

Despatched 12 DEC 1870
Received

Enclosures

Your No 7280 dated 15 December

Has the honor to Enquire the width of the Roadway for the Plate Girder Bridge of 2 spans of 30 feet referred to in letter above quoted

J. N. Grainger
Superintendent Workshops & Stores

I should say 14 ft in the clear unless we have already determined on another width for similar bridges on the same line

20/11/70

I know that 14 ft in the clear is to be the width —
I think I noticed in Grainger's estimate for Teak flooring — if so ask him now to state the cost — same for iron plates — C.G.
21-11-70

and
21/11/70

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No. Dated

To

To be issued on	Issued on
1st Reminder	
2nd Reminder	
3rd Reminder	
Heading:	
Case or Diary No.	
If post copy of telegram required	
Date of despatch of above	
List of enclosures	

(Code word for telegram.)

S. S.
MGIPC—S1—163(Genl)MFP—(M-1983)—5-5-34—50,000 Pads.

Mysore Public Works Department.

No. 7381

1870/71.

From The Chief Engineer

of Mysore

To The General Superintendent

Dated Public Works Stores

Despatched Clerk's ad

Received 21 Nov. 1870.

Enclosures No.

Subject

Genl. Superintendent's

No. 1496 of the 17th

Octr. 1870, requiring

the width of the

Doddaballapur Roadway for

the Plate Girder

Bridge of 2 Spans of

30 feet, referred to in the

Reminder sent.
7/12/70

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line† — *Only for Foreign Telegrams. †Not for Foreign Telegrams

No. Dated

To

To be issued on	Issued on
1st Reminder	
2nd Reminder	
3rd Reminder	
Heading	
Case or Diary No.	
If post copy of telegram required	
Date of despatch of above	
List of enclosures	

(Code word for telegrams)

S. S.

MGIPC—S1—155(Gen)MFP—(M-1983)—2-5-34—50,000 Pads.

Mysore Public Works Department
No 7720.

18

From The Chief Engineer
of Mysore

To

The Superintendent
P.W.D. Stores, Madras

Dated
Despatched 9th Dec 1870
Received

Enclosure No
Subject

and 7381

This Office No 7280 of
and 21st
the 15th November 1870,
requesting to be furnished
with a Plan for a
plate girder Bridge
of 2 spans of 30 feet
with
together with an Estimate of

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line† — *Only for Foreign Telegrams — †Not for Foreign Telegrams

No. Dated

To

To be issued on | Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading:

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegram)

S S

MGIPC—S1—159(GenMcP—(M.1223) 2.5.24—50,000 Pads

Public Works Workshop
Chepauk
15th December 1870

No. 1690

From
The General Superintendent
Public Works Workshops & Stores

To
The Chief Engineer
Ellyahs - Bungalaro -

Sir,

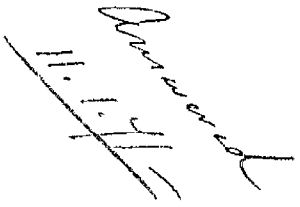
With reference to your letter marginally noted, I have the honor to enclose herewith Plan and Estimate amounting to Rupees 44444 — 9 — 11 for a plate Girder bridge of 2 span of 30 feet each.

by 21st hour &c
Rec'd 8th Dec.
1870

This estimate includes the cost of timber flooring sheet iron not being in store.

I have the honor to be
Sir
Your Most Obedt Servant

H. Granger
Offg Supt P. W. Workshops & Stores



No. 7983.

Manager C.P.W. Workshops Madras

Sir,

With reference to the Minute inwarded with your letter No 1090 of 15th instant I have the honor to enquire if the cost of the iron work for 2 No 250,- c.m. - includes carriage to Bangalore or is merely the net cost of the workshops

I am, Sir,
Your most obedient
Servant,

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Class for telegrams — Ordinary / Express / Urgent* / Priority / Clear Line† — *Only for Foreign Telegrams. †Not for Foreign Telegrams.

No. Dated

To

To be issued on	Issued on
1st Reminder	
2nd Reminder	
3rd Reminder	
Heading :	
Case or Diary No.	
If post copy of telegram required	
Date of despatch of above	
List of enclosures	

(Code word for telegrams)

S.

GIPC—S1—158(Genl)MFP—(M-1063)—3-5-34—50,000 Pads.

Public Works Workshops
Bhepauk 4th January 1871

4

No 1752

From

The Superintendent
Public Works Workshops and Stores

To The Assistant Chief Engineer of Mysore
Bangalore

Sir

With reference to your letter No 7983 dated 21st December 1870 I have the honor to state that Rupees 2507. 12 simply the cost of Manufacture and delivery of the articles at Bhepauk

The Cost of Conveyance will form a separate charge

I have the honor to be
Sir
Your most obedient Servant

A. Spaiger
Superintendent Public Works Workshops

6/1/71

6/1/71

7dd 31
9-1-71

To Chief Engineer.

Thavamtullah Bridge Project —

Grainger submits an Estimate of Rs 4444 per main girder
in bridge, 2 spans of 28½ ft. clear span each.
main girders are of the ordinary, plate-web type —
3 ft. deep. —

Calculation per main girder —

Total weight of iron = 15 tons.

For one span = 7½ tons.

Say total w. per unit length = 4½ tons. approx.

Dead weight = 12 tons.

Live load 2 ½ per sq. ft. = 4.5 tons. (calculated at 56 lbs.)

" " per one span = 5.7 tons.

For one girder = 28½ tons.

$$\text{min. M. required} = \frac{WL}{8D} = \frac{28.5 \times 26.5}{8 \times 3} = 33.84$$

If net C. required in Top flange = $\frac{33.84}{4.5}$ = 7.5 sq. inches

Area of T. flange —

Plate = 12" × ½" =	6	sq. inches
2 ∠ irons of 3 × 3 × ½ =	6	
	12	sq. inches
Deduct rivets 6 × ¾ × ½ =	2.25	
Area available	9.75	

Area of bottom flange —

Plate = 9" × ½" =	4.50	sq. inches
2 ∠ irons 3" · 3" · ½" =	6	
	10.50	sq. inches
Deduct rivets	2.25	
Area available =	8.25	sq. inches.

required per bottom flange = $\frac{33.84}{5}$ = 6.77 sq. inches

∴ Both flanges are more than strong enough.

S. T. C.

Calculation per transverse girders -

Dead weight on each say = 1 ton.
Live load " = 7½ "
Total = 8½ tons.

Strain at centre $= \frac{WL}{8D} = \frac{8.5 \times 15''}{8 \times \frac{3}{4}} = 21.25$

area of Top flange required $= \frac{21.25}{4.5} = 4.7$ sq. ins

area of flange -
Plate = 6" × ½" = 3 sq. inches
2 ∠ irons of 2½ · 2½ · ⅜ = 3.75"
6.75
Deduct rivet 6 × ½ × ½ = 1.25"
5.50 sq inches

∴ Flange is strong enough
N.B. ½ flange per has omitted from his between the Bottom

From this Plan it would appear that the girders are
bolted together - at the piers, thus forming a continuous
girder - over the 3 openings. This would possibly admit of a consid
reduction in weight of metal, but such has not appeared
necessary. - The span from edge to edge is only 28½ ft.
30 ft. clear is required.
The 30 ft. span bridges sent out from England cost ab
Rs 1,137 a set or for a bridge of two spans only Rs 2,274;
this for 2 spans of 28½ ft cost Rs 4444 in Madras. -

Ch. Brereton
Asst.
ale.
9-1-71

Copy of this with
Sketch is handed
to Mr Spurgeon
for such observation
as he may choose
to offer - in forming
the working Estimate
of Bridge Superstructure
in the two sets of
Spandrels

9/1/71

CB.

No 182.

To The Supt P.W. Stores, Madras

Sir,

With reference to your No 1690 of the 15th Dec: 1870, forwarding Plan & Estimate amounting to Rs 44444-9-11, for a Jubbulpore Girder-Bridge of 2 Spans of 30 feet each — I am directed to forward for such observations as you may desire, copy of a Memo: on the Bridge in question — & specially with reference to the marked difference of price observable in the two sets of girders —

2. The Estimate is herewith returned as duly referred.

I have &c

Asst Chief Engr

(Received) 11.1.71 —

34

Public Works Portfolios.
Shepaut 7th February 1871.

No 2041

From
The General Superintendent
Public Works Portfolios and Stores
To
The Chief Engineer of Mysore
Bangalore

Sir.

In reply to your letter No 182 dated 11th January 1871, I have the honor to state that the asserted difference of price is probably owing to the Portfolio rates being higher than the English rates.

The timber flooring hand rails &c may be in excess of the material supplied from England.

The general design of the bridge may be different from that supplied from England the main girders having to serve as parapets. In the design a strain of 3 Tons per square inch in compression and 4 Tons per square inch in tension is allowed as shown in red figures in your Memo: herewith returned.

The average price of the iron in the Portfolio Stores is about £ 12 per ton.

I have the honor to be
Sir
Your most obedient Servant

[signature]
Superintendent Public Works

Dr. Barnwell
thanks dictation

10/2/41

Chamberlain Bridge

Complete the file - St. Clair
letter submitting the project
is not in it. CLS.
10-2-41.

Answered
10.2.41

Shorncliffe Bridge Project.

Mr. Grainger submits an Estimate of Engineering for one iron girder Bridge, 2 spans of 28' 2" clear clear span, each.

The main girders are of the ordinary plate web type and are 2 feet deep.

Calculations for Main Girders

Total weight of iron = 15 tons.

For one span = 7½ tons

Iron Metal or gravel surface = 4½ tons a square

Dead weight = 12 tons

Nine tons @ 1½ per ft run = 45 tons taken over

Total for one span = 57½ tons

For one girder = 28½ tons

Mean ratio = $\frac{W I}{8 D} = \frac{28.5 \times 28.5}{8 \times 3} = 33.84$.

∴ Area of metal required in top flange = $\frac{33.84}{4.5}$ = 7.52

Area of bot flange = $\frac{33.84}{9}$ = 4

Plate = 12" × ½" = 6 square inches

2 L irons of 3" × 3" × ½" = 6 " "

12 square inches

Deduct rivet 6 × ¾" × ½ = 2.25

Area available 9.75

Area of bottom flange.

Plate = 6" × ½" = 4.50 square inches

2 L irons 3" 3" ½" = 6

10.50 square inches

Deduct rivets 2.25

Area available = 8.25 square inches

Area required for bottom flange = $\frac{33.84}{5}$ = 6.77 sq. inches.

∴ Both flanges are more than strong enough. $\frac{33.84}{4}$ = 8.46

Calculation for transverse Girders.

Dead weight on each cwy = 1 Ton.

Live load = 7½ Ton.

Total = 8½ Tons

Strain at Centre = $\frac{W.L.}{8\square} = \frac{8.5 \times 15}{8 \times \frac{3}{4}}$ = 21.25

Area of bot flange required = $\frac{21.25}{4.6}$ = 4.7 sq. inches.

Area of flange.

Plate = 6" × ⅝" = 3 square inches.

2 L irons of 2½". 2½". ⅜ = 3.75.

6.75.

Deduct rivets ⅞ 6 × ½ × ½ = 1.25

5.50 square inches.

∴ Flange is strong enough.

N.B. Mr Parrigon has apparently from oversight omitted from his estimate the bottom flange. Contract 8

From the plan it would appear that the girders are to be bolted together over the piers, thus forming a continuous girder over the two openings. This would possibly admit of a considerable reduction in weight of metal; but such has not apparently been made. The span from edge to edge is only 28½ feet, whereas 30 feet clear is required.

The 30 feet span bridges sent out from England cost only Rupees 1,137 a set or for 2 bridges of two openings only Rupees 2,274; whereas this for 2 spans of 28½ feet, costs Rupees 4,444 in Madras.

Ch. Brown Lieut. R.E.

Assistant Chief Engineer of Mysore

Bangalore
9th January 1871

Fo. 057.

To. The Supt. C.P. Stores, Madras.

Sir,

With reference to your No 2541 of the 7th inst. I have the honor to request you to be good enough to return the Estimate forwarded with this Office No 182 of the 11th ult., and to send at the same time a plan of the Bridge in question.

I have the &c.

Asst. Chief Engr.

Cdm, 16.1871.

DEPARTMENT.

BRANCH.

Draft

Letter / Memorandum / Telegram

Class for telegrams

Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams

No. Dated

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading :

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams.)

S. S.
MGIPC—81—15(Genl)MFP—(M 1983)—7-5-31—50,000 Pads

Public Works Workshops
Bangalore 7th March 1871

No 2272

From

The General Superintendent
Public Works Workshops and Stores

To

The Chief Engineer of Mysore
Bangalore

Sir,

I have the honor to forward Plan and a revised Estimate for the Bridge alluded to in your No 907. dated 16th February 1871. Government having been pleased to reduced certain charges against the Workshops the cost of Iron Work in the Plate Girder Bridge has been reduced to Rupees 200/ per Ton.

I have the honor to be
Sir
Your most Obedt Servant

[signature]
Genl Supt Public Works &c

No 80
524

Executive Engineer's Office
Coorg Division

From The Executive Engineer
Coorg Division
Mercara 15th March 1871.

To
The Assistant Chief Engineer
of Mysore.

Sir

I have the honor to request you will let me have a Copy of the Design for the Chorumbullah Bridge sanctioned in the Budget for 1871-72 so that if possible, I may execute the estimate before the setting in of the Rains

I have the honor to be
Sir
Your Most Obedient Servt

Lieut R.E.
Executive Engineer
Coorg Division

Inform that a case
private nature under investiga-
not that of personation
which may be communicated.
also state that an inves-
tation [illegible] of the
will probably be decided
on — Oct

Inform Engineer
Coastguard
Chief Engineer
of Dry Dock
dated 15th March
Norfolk. —
Received.

Replied
Requests to be furnished
with Copy of the
Register sanctioned
for the Queenhithe
Barge.

Received
21. 3. 71

Executive Engineer's Office
Coorg Division

No 81/525.

From

The Executive Engineer
Coorg Division

Mercara 15th March 1871.

To

The Assistant Chief Engineer
at Tanjore

Sir

I have the honor to request you will be good enough to send me the Plan of the Chowmhullah Bridge for which an Estimate has been sanctioned by the Civil Commission for execution during the Coudre year. Understanding that there was a Lattice Girder Bridge of 60 feet Span lying in the Tanjore Store yard, I would take the liberty of suggesting that the same might be sent up for the Chowmhullah River, unless the Cost should happen to exceed by much the Sanctioned Estimate. Since the Span of 60 feet Clear waterway will suffice, & as such a Bridge happens to be lying idle in the Stores, I would fain hope, that Coorg may be the fortunate recipient of an Elegant Iron Structure. I have the honor to be

Sir

Your most Obedient Servt

Signed F. K.
Executive Engineer Coorg

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Class for telegrams	Ordinary / Express / Urgent* / Priority / Clear Line†	*Only for Foreign Telegrams. †Not for Foreign Telegrams.	No.	Dated

To

To be issued on	Issued on
1st Reminder	
2nd Reminder	
3rd Reminder	
Heading	
Case or Diary No.	
If post copy of telegram required	
Date of despatch of above	
List of enclosures	

(Code word for telegrams)

S. 5.

MG1PC—S1—158(Genl)MTP (M 1989)—7 7 34—50 000 Pads

Mysore Public Works Department
No 1435

1870-71.

From The Chief Engineer
of Mysore
To The Executive Engineer
Coorg Division

Dated
Despatched } 21st March 1871.
Received

Enclosure in
Letter

Forwarding No 524 of the 15th inst: requesting copy of design for Chowrikuttah Bridge.

Reference 4:5: Kuttit is at present under consideration, but that the Superadgy bricks may be commenced.

DEPARTMENT.

BRANCH.

Draft

Letter / ~~Memorandum~~ / ~~Telegram~~

Class for telegrams: Ordinary / ~~Express~~ / ~~Urgent*~~ / ~~Priority~~ / ~~Most Urgent~~

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No. Dated

To

To be issued on	Issued on
1st Reminder	
2nd Reminder	
3rd Reminder	
Heading:	
Case or Diary No.	
If post copy of telegram required	
Date of despatch of above	
List of enclosures	

(Code word for telegrams)

S. 5.

MGIPC—81—168(Genl)MFP—(M.1983)—3-5-34—50,000 Pads.

No 1555

To The Ag. Engineer. Coorg.

With reference to your letter No 336/2069 of 18th Ult submitting a rough design for a bridge over Chowrambullah, I have the honor to inform that the Offg. Chief Engineer considers the design suitable. The piers should be abutments the semicircular ends arches will do very little towards resisting the thrust of the flat arch in the centre, & it is assumed that one of the piers is placed over the deepest part of the stream which is objectionable. I forward a design of a better pier which he considers upon, & request I am informed if it will be suitable. Perhaps Jamma Kandy if it would be advisable to cover the stream in the middle, as it flows very rapidly & has probably good depth, this point, would be settled by the estimating Branch of your office.

The Offg. C.E. thinks you should that your estimates upon which we can recommend that the sanction be given should be made in accordance with the design. You should carefully examine into the relative suitability & merits of the two designs & that for the Cattle pier.

Thanks for your information & correspondence with regard to the cattle pier & the enclosure returned herewith.

Yours [illegible]
March 1890

[illegible]
[illegible]

Ja. un. the same 5th April No. 90
659

No. 90
659

Executive Engineer's Office U.S.
Coorg Division

From

The Executive Engineer
Coorg Division
To Mercara 5th April 1871

The Chief Assistant to the Engineer
& Mysore.

Sir

I have the honor to submit the following remarks to the general account rendered with the Executive Engineer's letter No. 1555 of the 29th March, including a Plan of Lattice Girder Bridge demanded from the General Superintendent of the Indian Ordnance Stores.

The Nanjanad Stream is locally a Mile Stream, and therefore liable to a rapid rising and swelling of the current during the Monsoon months, June, July & the Year, and during the rest of the year the Stream flows with considerable velocity, during which time the French Rocks hinder the passage of man or beast either on foot or in a Boat: this temporary barrier

to passing traffic, although you may only for 6 or 7 days, at any one time, is very objectionable, and thus the sooner the Bridge is constructed, the better pleased will the Public, in general, be.

Owing to the great velocity of its Volume of Water, I thought it most advisable to design a Structure of either Masonry or Iron, giving a free and ample waterway to the Central Line of the Stream, not at all hazarding any risk by setting the Piers near the foots of the River Banks, where the velocity of the Stream would necessarily, from its coming in contact with certain obstacles, be greatly diminished.

I quite concur in the opinion, that an Iron Lattice Girder would be preferable to a Masonry Arch, as a greater waterway could thus be given, without increasing the length of the Girder, which is a consideration when funds are scarce.

In the case of the Thorumbullah Bridge, the Abutments could be raised

18 feet, which with a 45 feet clear span would produce a waterway of 45 × 18 = 810 Sq. exceeding the Maximum Flood Sectional Area by 200 Sq. feet, a sufficiently safe Margin. I would venture to State, to meet such a Contingency, as a larger body of Water flowing down, than has ever before been seen by any of the Inhabitants of that District —

Assuming the Abutments to measure 7 feet broad, 18 feet high and 20 feet long, the total quantity of Brick work, will amount to about 5040 Cft, which at 5 Rs per Cft (for Good Brick set in Chunam) would Cost upwards of Rs 1500/, the Flooring Rs would raise the Estimate figure to abt Rupees 2500, to this sum must then be added the Cost of the Cofferdams &c. and Boarding, say Rs 500. with Cartage at Rupees 1000/ aggregating Amount Rs 4000 to Rupees 8000/. which will be within the Mark Estimate for the Project.

I have the honor &c
Jas Spiers Lieut Corps
of Engrs
Executive Engr

Clarke does not appear to have replied to communication referred to in 2/30 Minister from the Finder [illegible]

11/4/71

Dispatch 1 Ch.
7-4-71

Dispatch
No. 1

To The Executive Engineer
Coast Division
Public Works Dept.
Bryanston

Dated 5th April 1871

Sir

Received Enclosures No.
Subject

Clarke Honor to offer certain remarks on the several points marked by the Chief Engineer in No 1555 relative to the Bridge now constructing across the Avoca Creek

c/o 1765

To The Ex. Engineer Corps.

50

Sir,

In reply to your Letter No 90 of 5th instant on the subject of the proposed Chunnakullah Bridge I am desired to inform you that you do not appear to have sufficiently considered the comparative merits of the iron bridge & of the brick arches supported by the Chief Engineer. I am therefore to request you will be good enough to submit a further report on the matter, giving a simple comparative statement of the cost of both structures & taking full care that in each design ample waterway is given. In determining which plan should be adopted due weight should of course be given to such points as the permanent character of a masonry bridge when fairly built on one side, & "per contra" the greater facility afforded in construction by adapting iron girders, the saving of Timber rendered necessary, the clearer waterway given, &c.

I have to observe that you propose to give a waterway of 600 sq. feet by using the girders of 45 ft. span & making the abutments 18 ft high, allowing 4½ ft for depth of girders 810 sq. feet of section would thus be obtained, but this should not be calculated upon as if the water rose to such a height as 18 ft the bridge would manifestly be in imminent danger.

I am &c.

Ex.

18-4-65.

I will now consider the case
of the two 30 inch mains, proposed by
Major Wilson. Supposing the ground
to be broken, the road and footpath
to be taken up, the mains, & the
waterway or sectional area, will
be as follows to 30 inches (nearly) -

[illegible]

[illegible]

[illegible]

Die most [illegible] Construction
is die [illegible] estimated: Mittag-
Spitzbruch taking into consideration even
portions of the Bridge [illegible] to be
made, [illegible] as [illegible], also
may be agreed [illegible]. [illegible]
[illegible] [illegible] [illegible]

2 . 42 × 2" × 2 = [illegible]
[illegible] = 2 . 25 × 7.5" × 10 = 3900
Floor = 20 × 5" × 10 = 1300
Railings [illegible] = 2 — 70 × 2 × 10 = 840
9400 ℔

[illegible] 9400 ℔ [illegible] = 35.00 ℔

Approx. for the Approaches [illegible]

Abutments 2 . 25 × 6' × 20 = 6240

Approaches with Retaining [illegible]

Each of 6240 in 6 = 24000 ℔

[illegible] [illegible]

to the [illegible] Statement).

Each [illegible] [illegible]

[illegible] 60 [illegible]

[illegible] [illegible] [illegible]
the Temperature [illegible] [illegible]
to [illegible] (1.5) [illegible] [illegible]
Calculation [illegible] [illegible]

are 1st of the comparative value of the two different descriptions of Material, as regards their suitability to the Locality in Question, and 2nd of the Advantages of erecting the One description, as Compared with the other, in Order to effect a Saving of time -

The durability of good Masonry, may not bear unfavorable comparison with that of Cast Iron Structure, in all probability, so that for the Locality of the Brownsville Stream where brick Earth of a good quality is procurable at a reasonable distance, a Masonry Arch Bridge, would answer the requisite purpose equally well, as the Iron Bridge but on the other hand, some Considerable difficulty may be experienced, in obtaining the requisite Labor, both Skilled & Unskilled just at the very Season of the Year, when such Laborers are for the most part busied in their Steps to their Native Villages. Another difficulty may be also experienced in the Manufacture of the requisite Number of Bricks, between the Close of the Season in the February following, to permit of the whole work being Completed in One

Season, because the Brickmakers were disinclined (judging from my inability to obtain the Services if any to work there crew) to work on that Locality in the two months of March, April and May — whereas the Abutments requiring less Brick work for the Iron Superstructure could be run up more rapidly, and if the Iron work were landed, at Site by Contract, the whole Work be completed by end of the following —

I have the honor to be.

Sir

Your Most Obedient

Humble Servt

Francis Fowler

Lieut. R.E.

Witness

Wm. S.

18th R.E.

Camp Woo...

Bellary

To Offs: Chief Engineer

Shorncliffe Bridge project.

Herein reports regarding the comparative merits of masonry arch and iron lattice girder masonry structure — 2 arches of 30 ft. span — to cross at Rs 38-10, — (specimen of design, embankments, &c, shewn on tracing). The iron bridge is shewn at Rs 6000, but in point of cost the former is the dearer, while in point of durability it will, if properly constructed, be of greater.

It shows to me, however, that the comparison made is not quite fair. The abutments + pier of arches are carried 10 ft. high in the abutments + pier, under 20 high. The maximum height of flanges is stated at 11 feet — the abutments of girder need not be more than 15 ft. allowing 4 ft. clear above H.W.M. and room enough for girder. If the water is shallow the waterway should be increased by increasing the span. Further "Centering" costing arches' workmanship is required in them, which would considerably cost more than plates + angles. And it is understood that the abutments are made by the Civil Engineer, leaving only the two bridge of 50 ft. span, the latter as regards cost might be made to the same proportion as masonry arches. Cost however, the main point is probability which must decide for the masonry bridge, first as being affordable at site.

The main objection to the lattice girders is liability

but if wicks can be manufactured for the abutments of the Iron bridge it will take out little more than a week & make room for the arch & keep in other manner as regards construction than the same was abutments of wing, they are said to be kept in & form the works, & a larger number can employed in the first instance.-

I should therefore like instructions to order the Clerk of works - inspect for a masonry bridge of 2 spans 30 feet each. the 2 bridges can be right at the back out the river & works made upto. the width of roadway between parapets might be made 16 or 17 feet & the latter not any wider.

Ch. Bowen Vith
M.C.E.

Attended to
9.5.71

Bridge at Ballinrobe
Sir Richard Bourke
9th May 1871
Copy

To the Ex. Engr Camp Abi

Sir,

In reply to your No. 123/243 of the 27th ult regarding the comparative merits of a masonry arch bridge and an Iron lattice girder one - I have the honor to make the following observations, and request you to be good enough to submit a project for a masonry bridge of two spans of 30ft each - the Springing line to be fixed at R.W.M. level, the rise of arches made 1/8 of span, and the width of parapets 16 or 17 feet only -

2. In the under noted, the masonry structure of 2 arches of 30ft span - is shown to cost Rs 33500. (exclusive of wings, embankments &c, which are common to both)

3. The Iron-Bridge is shown to cost Rs 60000

4. As a question of cost therefore, the masonry structure is preferable; while it is properly constructed its durability will be superior to Iron-Bridge -

5. In Comparison however made by you does not appear quite fair - The abutments of girder are calculated 10 ft high; - the abutments of arches 20 ft high - The maximum weight of girder is stated to be 11 feet - The load - Level is stated to be 15 feet; allowing 4 feet clear between R.W.M. and the lower flange of girder - The height is given to afford more entrance &c is correct - The arch may, should be increased by increasing the span -

6. "Masonry", including the arches, "Brickwork"

spandrels" — Items which could conveniently be taken into account by the Cost — have not been taken into account by you; and it is not understood why the abutments are made 26 feet wide. I will expend the difficulties in regards Cubic Brick can be manufactured for the abutments of the Iron Bridge, it will take much more time & trouble to make enough for the inches thick; and in like manner as regards Construction, either the masons have run up abutments & wings, they can easily be kept or be turns the arches, or a larger number can be employed in the first instance —

Q. The iron girder bridge was only suggested by Lt. Sankey — and would be [illegible]

[illegible]

[illegible]

Mysore Public Works Department

No 205 of 1871

From The Executive Engineer

Coorg Division

To The Chief Engineer

of Mysore

Dated 16th May 1871

Despatched

Received 19

Enclosures No

Subject

Sir, I have the honor to submit the Proposed Plan of Bridge of 2 - 30 feet Spans for the Cauvery at Chowdenhalli Ferry on the road to Periapatna. I have also sent with it Estimate for the same.

Partly answered 23/5/71

Chief Engineer

Chowdenhalli Bridge

Dr. Asst Chief Engr - S

20.5.71 -

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line† — *Only for Foreign Telegrams. †Not for Foreign Telegrams.

No. Dated

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading :

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegram.)

Detailed Estimate for Constructing the 2 4
Kundrankella Bridges. - Rawalpindi Branch

Details	No.	Dimensions L	B	D	Quantity	
Excavation - (Earth work)						
Abutments	2	26	10	8	4160	
Wing walls	4	40	6	8	7680	
Counterforts	2	22	6	8	5112	
					16952	Cyds 628
Superstructure and Footing Courses.						
Abutments	2	24	7	12	4032	
Wing walls	4	38	4	16	9728	
Counterforts	2	30	4	12	1920	
Face walls Do	1	18	2	7	1008	
Pier	1	24	6	12	1728	
Parapett walls	2	124	3/2	1/2	837	
Pillars to Do	10	6	3	6	1080	
Arch work	2	34	20	2	2720	Cft 2305
Centering						
Abutments	2	24	8	"	384	
Pier Do	1	48	10	"	480	
Wing walls	4	40	12	"	1920	
Face Do	4	18	8	"	576	
Parapett Do	2	124	10	"	2480	
Pillars to Do	10	15	6	"	900	
Soffetas of Arches	2	34	20	"	1360	

for 8/10

Detailed Estimate
in Constructing the
Emmanuel Bridge
Over the Colorado
River

To

Accompanying No. 142/943

Mysore Public Works Department

No 2361

1871/72.

From The Chief Engineer
of Mysore

To The Executive Engineer
Coorg Division

Dated
Despatched } 22nd May 71.
Received

Enclosures No

Subject

Executive Engineer's No. 142/943

Ltr dtd 16th May 1871,
Rough

Forwarding Plan and
Estimate of Bridge
of 2-30 feet Spans
for the Chorumbudu
Stream

With reference to the

DEPARTMENT.

BRANCH.

Draft — Letter / Memorandum / Telegram

Dated

No.

*Only for Foreign Telegrams.

†Not for Foreign Telegrams

To

Class for telegrams — Ordinary / Express / Urgent* / Priority / (Clear Line)

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of ures

(Code word for telegrams)

S. 5.
MGIPC—S1—158(GenD)MFP—(M 1939)—7-5-34—50,000 T

Mysore Public Works Department

No. 2260

1871

From The Executive Engineer

Cooroy Division

To The Chief Engineer

of Mysore

Dated

Despatched 29th May 1871.

Received

Enclosures No

Subject

Letter regarding
Kunda Vo Bridge.

S. 6. 71.

DEPARTMENT.

BRANCH.

Draft

Letter / Memorandum / Telegram

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line† — *Only for Foreign Telegrams. †Not for Foreign Telegrams

No. Dated

To

To be issued on | Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams)

1—S1—158(Gen)MFP—(V 19??)—?5?1—50,000 Pads.

192 To The Exp. Engineer Corps.

Sir, I have the honor to forward herewith a Plan & Estimate for the Chesterfield Bridge & request you will be good enough to attach a detailed Report thereto.

In this it should be clearly shewn that the waterway allowed is sufficient, & state that the design is fully applicable to the circumstances of the case. Should any modification appear desirable to you, you will be good enough to communicate them to me in order that the necessary alteration may be made in drawings & Estimate.

If your attention is drawn to the fact that the rock in bed of stream has already been eroded to the level of the footings of the proposed foundations. It should be clearly ascertained & stated that no danger will arise therefrom. Otherwise it will be desirable to make them still deeper.

The W.R. Chief Engineer remarks that the rate in a most excessive, but as you have frequently stated you cannot work for less, they must be passed.

Col.

11-7-71 Secretary Chief Engineer.

Augustus
July 1871

Mysore Public Works Department

No 3859.

1871/72

From The Chief Engineer

of Mysore

To The Executive Engineer

Coorg Division

Bangalore.

Dated
Despatched } 30th August
Received 1871

Enclosures Nos

Subject

This Office No. 3172 of the 12th July 1871 forwarding Plan and Estimate for the Chowmullah Bridge and requesting the Exec: Engineer will be good enough to attach a detailed report thereto.

Am continuation of

DEPARTMENT.

BRANCH.

Draft — Letter / Memorandum / Telegram

Class for telegrams — Ordinary / Express / Urgent* / Priority / Clear Line† — *Only for Foreign Telegrams. †Not for Foreign Telegrams

No. Dated

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading :

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams)

S. S.

MGIPC—S1—158(GenI)MFP—(M-1988)—3-5-34—50,000 Pads

Mysore Public Works Department
No 4335
1871/72
From The Chief Engineer
of Mysore
To The Executive Engineer
Coorg Division
Dated } 6th October
Despatched } 1871
Received
Enclosures No
Subject
His Office No 3172
of the 12th July 1871,
forwarding Plan and
Estimate for the Cho-
-rumbella Bridge
and requesting the
Executive Engineer
to attach a detailed
report thereto.

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Dated

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No.

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading :

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams.)

B.
HPC—81—168(Genl)MFP.—(M-1933)—3-5-51—50,000 Pads.

No 235-
1738

Executive Engineer's Office
Coorg Division

From

The Executive Engineer
Coorg Division
Mercara the 4th October 1871.

To

The Assistant Chief Engineer
of Mysore.

Sir

With reference to the Chief Engineer's No. 3172 of the 12th July, returning the Plan, with Estimate, of the Chaw-
-rembulla Bridge, I have the honor to make the following Observations in reply-

The Chawrembulla River bed has a very considerable fall above the Bridge site amounting (as Calculated from the Longitudinal Section) to about 1 in 70 feet, for a distance of 1600 feet above this point, the bed rises abruptly to an Elevation of 15' to 20' and then rises more gently for some miles-

() shows assumed the fall at 20 feet

per Mile -

ictional area at Bridge site = 700 Sq feet (approxim

Wet Perimeter = 94 feet

ydraulic M depth = $\frac{700}{94} = 7.5$ feet or 90 inches

he Surface Velocity or $a = \sqrt{90 \times 240} = \sqrt{148}$ inches $= 12$ feet per

Mean Velocity or $b = 9/10 \times 12 = 11$ feet per secon

Requisite Frictional Area or Waterway $= \frac{b}{a} \cdot 700 \times m = \frac{11}{12} \cdot 700 \times 1.04$

Constant m his $= 1.045$

Assuming the height of Abutments take 8 feet, as shown, in the accompanying Plan

The Chord of Segment = 30'

and Versed sine — = 6

The area of waterway given, will amount to,

Area of Sector $= .008727 \times n \times v^2$

$n = 87^\circ 12' = 87.2^\circ$ $= 360$ Sq feet.

$v = 21.75$

Area of $\triangle = \frac{1}{2} \cdot 30 \times 15.75$

$= 236.25$

Area of Segment $= 360 - 236.25 = 123.75 = 124$ Sq. feet

Area of 2 Spans $\left\{ \begin{array}{l} 2 \times 8 \times 30 = 480 \\ 2 \times 124 = 248 \end{array} \right\} = 728$ Sq ft

Thus only allowing a [illegible]
of 50 Sq/feet, above the Actual square
Area Required, which in my Opinion
is not enough to meet any extraordi
Floodings - I believe in my Origin
Sketch of the Bridge Plan, which
was submitted, in the rough, I
entered the height of Abutments at
12 feet, to which level I would
suggest their being raised, to prevent
the Bridge being subjected to any
undue water pressure. Until the
Foundations are Actually opened o
the Rock strata Carefully examined
it is practically impossible to lay
down any definite dimensions, for t
Footing Courses, So I must beg
permission to alter the Plan of th
Foundations, if found Required
hereafter. The Rocky stratum o
the Central bed of the Stream, is
Apparently solid, and Capable of
bearing [illegible] weight.

Superstructure, but for safety sake,
I would propose to table the Rock
as deep as experience may dictate,
as represented in the Section -

It is difficult to determine
the accurate rates for the work in
question, having no reliable data
to be guided by, but those entered
are, it is conjectured sufficient to
meet the probable charges, unless
any unforseen circumstances
should upset the Calculations -

I have the honor to be
Sir
Your Most Obedient Servt

Lieut. R.E.
Executive Engineer
Dist. Division

16.10.71

Rec'd 16/10/71 No 235
1738

From The Executive Engineer
Cauvery Div
To The Assistant Chief Engr
of Mysore.

Dated 10th October 1871

Rec'd
Read

Enclo 1 Plan & Estimate

Subject

Forwards Estimate and Plans for Constructing a Bridge over the Chowrankulla Stream

DEPARTMENT.

BRANCH.

Draft

Letter
Memorandum
Telegram

Class for telegrams

Ordinary
Express
Urgent*
Priority
Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No.

Dated

To

To be issued on	Issued on
1st Reminder	
2nd Reminder	
3rd Reminder	
Heading	
Case or Diary No.	
If post copy of telegram required	
Date of despatch of above	
List of enclosures	

(Code word for telegrams)

S. S.

MGIPC—S1—168(Genl)MTP (M-1083)—3-5-34—50,000 Pads

No. 1689.

To E. E. Corps

Sir

I am directed to inform you that the Chief Engr. considers the waterway provided by the proposed bridge of 2-30 feet spans over the Chowrambully stream on the Trichinopoly Road both weak and insufficient, and that, consequently, the design will be returned in the Office to be provided for 2-40 ft. spans.

2. The Estimate thus altered will be sanctioned without further reference to this Office, but, when altered the project having received the approval of the Chief Engr., you are requested to proceed on with the preparation of materials &c under the Estimate, as far as practicable, the allotment of Rs 7050 provided for the bridge in the current year's Budget.

Bangalore 27th Oct 93

WL 27/10/93
Asst. Chief Engineer

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No.

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading:

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams)

S. E.
MGIPC—S1—158(Genl)MFP—(M.1969)—7-5-34—50 000 Pads.

Mysore Chief Commissioner's Office
Public Works Department
No 4934

1871/72

From Lieut Sconce to the Chief Commissr
of Mysore
Public Works Department
To Lieut Executive Engineer
Coorg Division

Dated
Despatched } 14th Nov: 1871
Received

Enclosures No 2

Subject

This Office letter No 4689 dated 27th October 1871 informing that the Estimate for the construction of a Bridge of 2 arches & 40 ft span across the Chennambady River - Mercara Canarese Road will be

DEPARTMENT.

BRANCH.

Draft — Letter / Memorandum / Telegram

Dated

No.

To

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading:

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams)

S.

GIPC—S1—158(GenDMTP - (M-1983)—3-5-34—50 000 Pads

142
962

Hyderabad Engineer Office
Camp Shivaram

From Lt. Hyderabad Engineer
Camp Devicam.

Memoranda 15th June 1872.

To The Assistant Chief Engineer
of the Nizam.

Sir

In the Progress Records for Branch of the Shaw-ram Mallar Ledger, you called for a Report regarding the Arwale facing Groyne made during January to March, remarking that it will be impossible to carry on work during May to November, the river being in flood, and directing to be supposed during which months the work could be executed on. Complying therewith I have the honor to state, that the end of the last official year was exceptionally unhealthy: heavy rains having fallen in November 1871, the commencement of 1872 was ushered in by little sickness, and I believe that this effected the health of the workmen. Another circumstance that evidently came influence in the case direction was, that the Coolies were settled about half a mile from the site of the work, in the Jungle - The Shaw-ram Mallar river is very badly

...kaleby on the Vinciana side the forest reaches nearly to the Godaferon River, a distance of 6 Miles; and on the Sonnuarpetto side it extends ... to the Poorendhuman Nowray (3 Miles) but as no water is procurable at this place, the camp will have to be shifted daily 1 Mile further towards Sonnuarpetto. I shall try this latter place and hope that the loss of Quarrying forwards and backwards will be counterbalanced by the better health of the workmen.

During the last year nothing has been done except preparing some Materials, but there are no cut stone ready yet which will delay the commencement of building operations. As no Stonecutters are procurable in Coorg, I tried to get them from Salem and Mysore, but I was quite unsuccessful in the former place, and from the Executive Engineer Bauvery Division could only procure four men at a Monthly pay of Rupees 35 each. They arrived at Vinciana on the 10th February, commenced work at Chowrumbulla on the 12th and remained there until the 9th April, but suffering continually from fever. they quarried only 186 Cubic feet of Stone.

I will try to get Stonecutters early in the Season, if possible in the Commencement of November, and I hope to get sufficient Rockwork ready for commencing building Operations by the Middle of December: Should next season be as unhealthy as the past one, I am afraid that the Abutments, wing walls and pier only will be constructed during the present Year, as it would be too hazardous to commence turning the Arches, when the labor may leave the work any day.

The few Bricklayers available at Pensacola will be required for the new Offices and the Military Works; so that for the Chowenhilla Bridge men will have to be procured from a distance.

If the Executive Engineers Recommendation and Deputation Decisions would kindly accede me in procuring Skilled labor, I should be extremely obliged.

From the above Statement, it will be seen that the working season will be a very short one, and I do not think that I can with certainty depend upon Labor after the end of

February

1772

Plans the Honble Lords
Ordnance & Lieutenant Lords
of Militia
Plans

Plan of the Defences
of Port Royal
as the Chief Engineer
left it in 1720.

Plan of Port Royal
taken in 1742.
Remarks

Public

Plans referred to the
Chief Engineers Remarks
on Mr Rogers's Report for
Repairs & Expences

Plans of Blockhouses
Barracks &c

Plan of Port Royal
as it now is

Plan of Port Royal
as it now is

Plan of Port Royal
as it now is

Assistant Engineer Corp 75

706.

Sir:

From the particulars exported in forwarded No. 142/962 of the 15th June it appears that if the Chowrumballa Bridge is constructed on the design sanctioned in the Office No. 4934 of the 11th November it may be liable to damage of the work being opened to traffic after the next ensuing season and further if the streams are embanked it is questionable whether this ~~& ~~ may not be required in consequence thereof.

2. The Chief Engineer therefore considers it desirable to modify the present sanctioned design and by substituting girders for arches be assured both the amount of work to be actually done in the junction.

3. As there are now in the Fort William Magazine 2 sets of girders for 20 feet openings and one set for 30 feet, all available for same without prior having already been charged off and paid for as stores, the Chief Engineer has resolved that the new design shall provide for a central opening of 30 feet with two side bays of 20 feet each

4. I am therefore to request

submit a second design for a bridge for the above class, bearing in mind that an additional Arch way must be provided to clear floating timber and will change for the pedestrian both longitudinal and transverse as for the bridle corrugated iron sheet will carry the road material.

I have reference to the foregoing in your demi official of the 25th inst & still further reduce the cost of it by the substitution of iron plates for rather I am to state that your official proposal will be awaited. It would recommend that the heads of the bolts should be sunk or above in your sketch. In this point I am to suggest whether it would not be practicable to support the central arch of the superstructure by a bolt and horse shoe about ½ a foot in diameter each and bolted back to the masonry, two piers. These alterations if prepared here and added not to the work.

WR 28/6/72

Superintending Chief Engineer

Bangalore
28th June 1872

Loc. 15½

Assistant Engineers Office
Coorg Division

From

The Assistant Engineer.
Coorg Division.

Mercara 19th September 18

To

The Assistant Chief Engineer
of Mysore.

Sir

The Chief Engineer having ordered the substitution of Iron Girders 40 per span, for brick arches for the Piravu Hullah bridge I have the honor to request instructions in the matter. I have also to inform you that I am proceeding to prepare the detailed plans and estimates for this work.

2 Assuming the level of the roadway to remain the same as in the sanctioned design the height of the Iron girder between the Piers as shewn in the enclosed sketch will be 6 feet 6 inches. This is to be measured from the bottom flange of the Girders. I presume the line C.D. (vide enclosed plan) will be the top level of the Abutments and piers.

to be calculated on the top flanges, the depth of the girder will have to be deducted from the height given in C.S. Now assumed the depth of girder = $\frac{\text{Span}}{10}$ = 4 feet and drawn in dotted lines a B as shewn on this paper, but not to be inserted of this agree with the instructions submitted for the construction of the iron work.

3. Called to bring to your notice, that in any girder the girders will have to be made thicker than if were intended, unless the girders are to be continuous over the pier, and allowed to expand and contract over both abutments.

4. Shall be obliged by your inquiring me if Stone Slabs are to be provided, or Cast-iron bed plates to be used under those portions of the bottom flanges which rest on the brickwork; and also if the width of the roadway remains the same as in the sketch

5. It has been proposed to leave out the Ashlar facing to the Return of the Abutments and pier, and to protect these portions with wooden Sheet piling, but as this procedure was only recommended in Order to expedite the Completion of the bridge, and as it is presumed there will be sufficient time to finish the bridge Masonry before the Arrival of the iron work, I beg to recommend that the casing may be retained; this will not only give to the bridge a more finished appearance, but also minimise the annoyance and trouble occasioned by the periodical Immersion of the piling.

Early Orders and Drawings relative to enclosed plan are requested from the Engineer in Chief

Engineers Office Simla

Assistant Engr.

Submitted.
Bdk
24/9/72

The Asst Engineer
Cmty D.

The Chief Engineer
Z Empire

dated 19th September

Received.

Ereé Ore.

Subject

(Requesting instructions
in certain point to relative
to the proposed cross
Girder Bridge of 40 feet
span for Chowringhee

See draft-wtd
Atkt
11/9/72

Send
21/9/72

To Asst Engineer

Cork

Pmss No 208/1576 of 19th Sept/72

In reply observe that

(1) the roadway will be suspended from the lower flanges of the girders

(2) the girders will be so placed that the bottom of the lower flanges shall be 4½ ft clear above the H.W.M. mark on the pier

(3) The girders will be connected and fixed on the pier, and secured to each other at the abutments on either side. The present thickness of pier 5½ ft would therefore appear to be sufficient

(4) Iron bed plates will be ordered in England in the interval which has yet to elapse before the Contractor is entitled to [illegible] and Mr Ironmonger is invited to [illegible] to [illegible] which

(5) The Clear width in side
inside of upper flanges will be
14 feet. a change in width of roadway
Should be introduced of during
the masonry of the bridge

(6) The Arches work be entrusted
only on /approved by retained.

A rewards drawing or section for
Contracting these changes should
be made by Provincial Govt. Engineer
for the period of [illegible]

Ch. 23/70

Assistant Engineers Office.
Coorg Division

From

The Assistant Engineer
Coorg Division.
Mercara 17th January 1873.

To

The Assistant Chief Engineer
of Mysore.

Sir.

I have the honor to forward enclosed the sanctioned design and estimate of the Chowrwarhullah bridge and in a few days a revised plan drawing in pencil only showing stiffening flow plate girders on the Arches.

2. The instructions conveyed in your No 2954 of 24th September 1872 have been adhered to, but beg to remark, that by lowering the roadway over the bridge 2', the approaches on both sides will have very steep, particularly that on the left in the drawing (Honwarbett side). And I take the liberty to request the Chief Engineers favorable consideration on the desirability of raising the Abutments and Pier to the

Respectfully forwarded for your information

and the Plans are hereby to prepare

the plans & Estimates & should be

directed as soon as possible after the

completion of the Central Office. I

am sir I have a great deal of work

on hand

I have the honor to be

Sir

Your most Obed Servt

Superintending Engineer

Corps Engineers

20.1.73

Submitted
BMB
20/1/73

20-1-73

From The Assistant Engineer
Coorg Division
To The Asstt Chief Engineer
Dated 19th January 1873.

Dated
Recd
Rec'd

No. 42
Ex.

Assistant Engineer's Office
Coorg Division

From.
The Assistant Engineer
Coorg Division
Mercara 3rd February 1873.

To
The Assistant Chief Engineer
of Coorg.

Sir.

With reference to your remark in the progress report of the Cauveramullah bridge, I have the honor to state that the probable lapse on this work will be Rupees 4000. Every precaution has been taken regarding the setting of the Packing, but I am sorry to say, the season has been very sickly and it is found very difficult to get the Coolies together. All Materials are with the exception of Rubble are ready, and the work could be pushed on if Stonecutters were available. I have directed the Overseer Thimmayya to proceed to Periapatna in the Hassan District & to try and procure Coolies there.

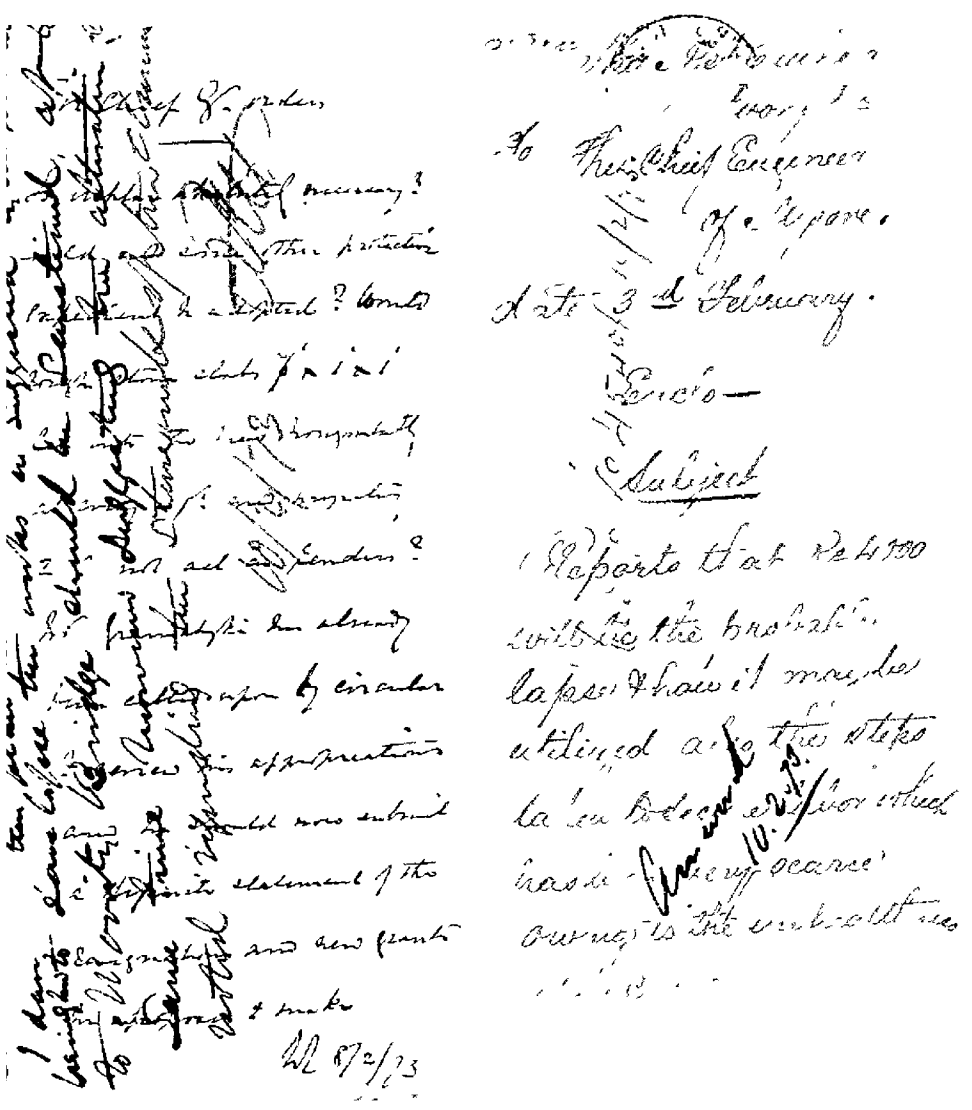
I am Sir
Your most Obedient Servant

be utilized for the work to be done at Roseity bridge, the Mercara Central Schools and for completing the Grade between Mercara and Siddapoor: for the latter work Rupees 600. will be required and Mr Hunt has offered to complete the work. Early Orders are solicited.

I have the honor to be
Sir
Your Most Obedient Servt

Mercara
9th February 1873

Assistant Engineer
Coorg Division



No 457.

Cond & Corry

Sir

I have the honor to acknowledge the receipt of your No. 62/141 of the 3rd Inst. in which you state that the work at the Chowringhee Bridge could be pushed on with vigor if not that the disciplined experience in keeping the Cutting at the Ghaut has prevented the Rubble work being carried and in reply I am to enquire whether the necessary Rubble work could not be obviated by some other judicious expedient such as the insertion of rough stone about 3' x 1' x 1' horizontally in the piers ~~and projecting~~ at every 4 ft in height and projecting 2 ft from the external face so as to act as headers and secure the stones from being brought down by the current. If you consider this expedient practicable you are authorized to act upon it.

2. I am to request an early reply to this Office number No. 23. of the 3rd Inst. requesting a return of the appropriations for your works and an Epitome statement of the establishments you are

of the 2' x 2' stone as under 8. Stone.

Letter arrived on Monday the 2nd Instant and in Anticipation of your Approval Know but the work in hand Erection will not be dressed but Large protuberances only will be Cancelled off.

2nd Schedule annexed alleged by Quarrying the Stone rejected with 10m 3 23 4th Cwt Company and by quarrying one of the Cubical made in two & of the same after has passed the Engineers Sanction.

Inverness 3rd March 1823

Thomas Telford Engineer

Per

Edward Jukes Assistant

Thomas Telford

Engineer

Inverness
3rd March
1823

Folio including No

23/26 Jany 1873

No. 643/13

Submitted
Col
7/3/73

From The Assistant Engineer
Aberdeen Division
To The Assistant Chief Engr.
of Bridges
Dated 3 March 1873.
Despd
Recd
Enclosures No
Subject
Proposals for the
Construction of the
Causeway of the
Chandbali Bridge

No 797

Aberd. Harb. Corp.

Sir

The stones exported in your Mr. $\frac{70}{305}$ of the 8th Inst. being of considerable size the Chief Engineer authorizes their being used for the end walls in the manner proposed but the longest stones for cornish should be placed as headers or binders at every 3d or 4th course

2. The Plan forwarded with your Mr. $\frac{23}{70}$ as herewith returned but the Chief Engineer agrees that the draftsmans detachment of these Piers have been so much occupied with Budget Plans &c that it has not been possible to spare a man to work out the drawing for this bridge

3. Raising the pier and abutments 3 ft as proposed in your Letter 2d of your Mr. 23 would add considerably to the cost of

the masonry and the Chief E. is unable to approve of it without further report as to the best method of improving the approach on the South compatible with in some cheaper manner. The inclined drive to the bridge must not exceed 1

- 10 -

. I am to enquire whether sloping abutments would not be cheaper than straight ones by curtains would have a better appearance

W.R. 7/3/77

Chief Clerk Civil Eng.

79
428

Assistant Engineers Office
Coorg Division.

From
The Assistant Engineer
Coorg Division
To
Mercara 2nd March 1843
The Assistant Chief Engineer
Mercara

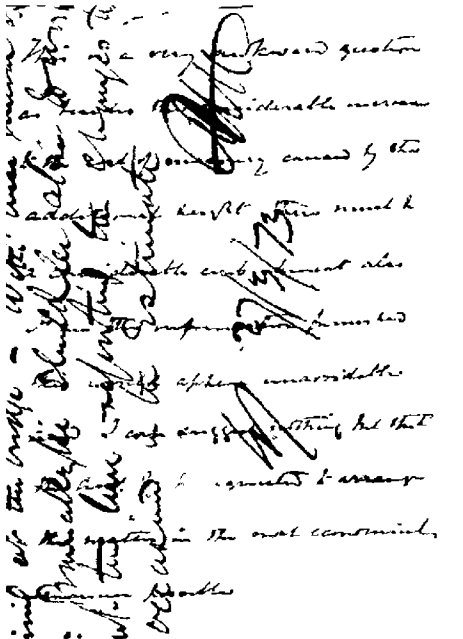
Sir

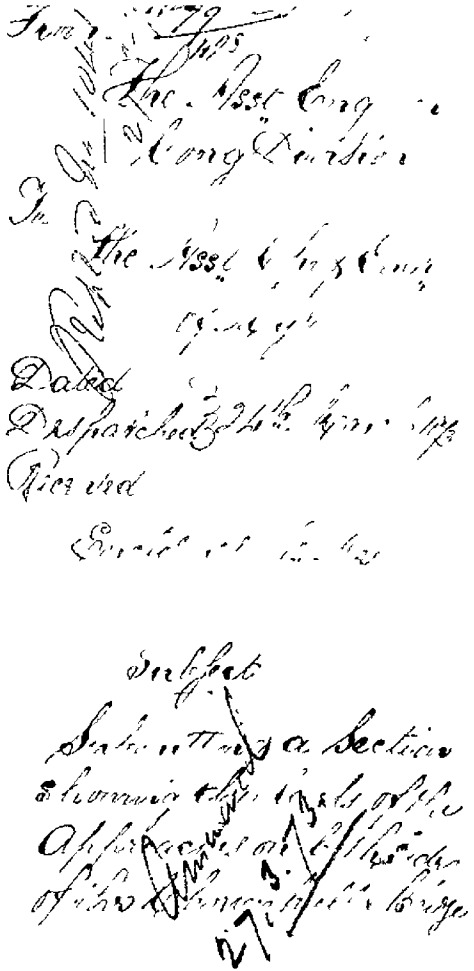
I have to report for your information that the Contractor for the Cowvarbetta Bridge, have the honor to commence erecting the Arches of the Bridge.

I will be ever that there is not [illegible] Cowvarbetta side a rise of 24 feet from the road level of the bridge to the road level of the opposite side, which gradient 1 in 10 which could be easily reduced to 1 in 15 by a Cutting to 1 on 15. The gradient of the other side which is not finished will be necessary to raise the road level of the bridge 5 feet.

Before commencing the Arches I shall have an order on this subject.

I have the honor to be
Sir
Your most obedient Servant
[illegible]





occasioned in the Estimate"

Mysore Public Works Department

No 1041

1872-73.

From The Chief Engineer of Mysore

To The Executive Engineer

Cowry Division

Dated
Despatched
Received } 27th March 1873.

Enclosures No

Subject

Your No 79/420 of the 24th inst. submitting section shewing the levels of the approaches on both sides of the Chowrumbullah Bridge, & stating that if the gradients of the Somwarpett side approach should not exceed 1 in 20, it will

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line† — *Only for Foreign Telegrams. †Not for Foreign Telegrams

No. Dated

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading:

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams.)

S. E.

Ar(120—S1—138(Genl)MTP—(W 1982)—2-5 24—30 000 Pads

From

To

Dated

Despatched

Received

Enclosures No.

General No. 2463 } 18
No 1328 }

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line† — *Only for Foreign Telegrams. †Not for Foreign Telegrams.

No. Dated

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading :

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams.)

S. 5
MGIPC—S1—158(Genl)MFP—(M-1983)—2-7-34—50,000 Pads

No. 2965

Asst. Gov. Corp

Sir

I am directed to inform you that the Estimate for the Chowringhee Bridge as designed with iron girders would amount to Rs. 18600 and I am to request that you will give your most careful consideration to the accompanying memorandum by the Chief Engr in which it is proposed to turn the arches in situ and to carry over the whole work to form the roadway. The method has been successfully adopted in other parts of the Province and as pointed out by the Chief Engineer has the great advantage of dividing the work into a number of separate parts each of which ~~could~~ be effected and easily carried out if the usual able labor did not admit of the whole of the site being ~~carried~~ turned in a single season.

2. You should consider the proposal in all its details, report whether you consider it feasible with the means at your disposal and suggest any alterations which may seem to you either as improvement or as tending to economize labor and materials. You

should also give your grounds on which the
method of changing the interest
3. If you will send in a simple Estimate for
the carried approaches with a statement of the
sums you consider should be allowed for filling
embankments &c. with particulars of length of land
and abutments, the drawings and Estimate
will be prepared in this Office

The Plans and Revised Estimate are
herewith returned.

M. Hill
Esq. C.E.
Aug. 1. 77

Assistant Engineer's Office
Coorg Division

No. 29
1892

From

The Assistant Engineer
Coorg Division
Dated Shoucara 15th October 1892.

To

The Assistant Irrigation Engineer
of Mysore.

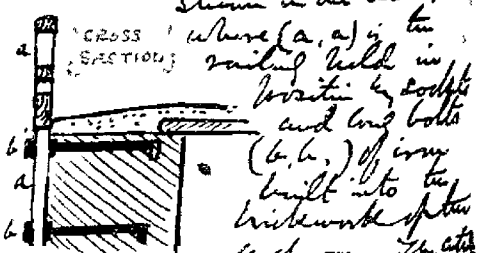
Sir,

I have the honour to acknowledge receipt of your No. 2965 of 26th ultimo, returning revised plan and Estimate of the Lakkavanhallah Bridge, and directing my careful consideration of the Irrigation Engineer's memorandum, forwarded with the above quoted letter. In reply I beg to state, that I do not think such a segmental rib could be constructed [illegible] but that to avoid the chance of [illegible] I would be disposed to [illegible] which I should propose to carry up the [illegible] to High water mark and to the Cycle spring above this level, but in order to obtain the necessary [illegible] for diminishing the work in the Approaches I would make the rise 1/4 of the span or 10 feet. With the

Wood Bridge

Mill 26.10.71

A design should
at once be forwarded
the Draughtsman's Engi
him in accordance with
the Granville's letter —
only difference will be
regards the forebents wh
I now enclose to
of Strong timber railing
so as to give a clear width
to the roadway of 14 ft.
of 12 as in my memo
this can be arranged
shown in the margin



where (a, a) is the
railing build in
vertical by coach
and long bolts
(b, b,) of iron
built into the
brickwork of the
ends. The cut
ril to be covered with slabs

92

Imperial

Mysore Chief Commissioner's Office

Department of Public Works

No 2296

1873/74.

From The Secretary to the Chief Commissioner of Mysore

To The Assistant Executive Engineer Coorg Dn

Dated 21st Nov/73
Received

Enclosures No 4
Subject 2 Plans 2 Estimates

His No. 291 of the 1491
15th Ultimo regarding Chowkhutta Bridge on the Mercara-Somwarpett Road.

With reference to the above, forwards no. 2.

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Dated

Class for telegrams

Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams

†Not for Foreign Telegrams

No.

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Marking

Case or Diary No

If [illegible] required

Figures to be set above

Last date for reply

(Code word for telegrams)

(122) S1—158(Cent)MFP (M 1983) 5 34—50 000 Pads

Major Public Works Department
Nagpur

1874/75.

From The Chief Engineer
Asst 1st Major
To The Executive Engineer
Amt Coop Warora

Dated
Registered
Received } 7th July 74.

Enclosures Nil
Subject

Assistant Engineers
No. 212/910 of the 30th
June 1874, requesting
an appropriation
of Rupees 3000 on
account of Chanda-
Rullo Bridge.

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Ordinary / Express / Urgent* / Priority / Clear Line* — *Only for Foreign Telegrams

r telegrams

§Act for Foreign Telegrams

No. Date

To

To be issued on — Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Cypher word for telegrams)

No 87
1877

Assistant Engineer's Office
Coorg Division.

From The Assistant Engineer
Coorg Division

To Mercara the 12th March 1875

The Assistant Chief Engineer
& Mysore

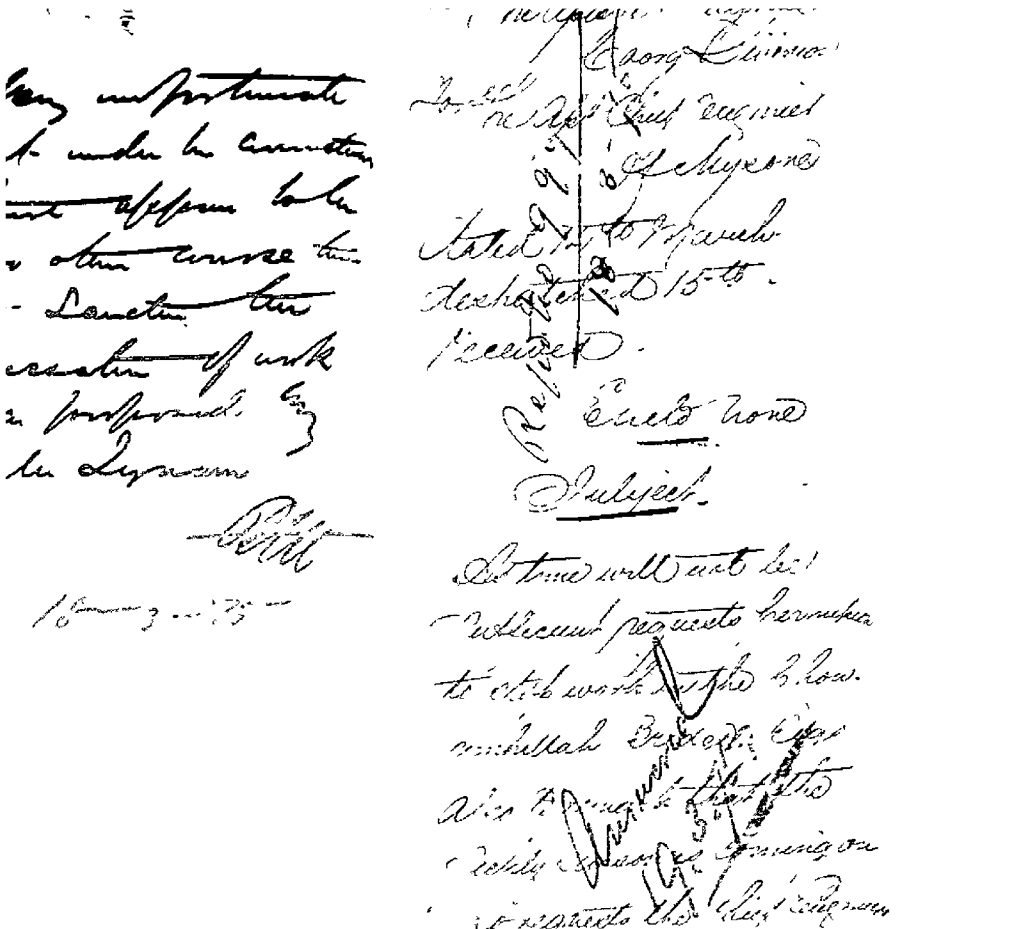
Sir With reference to the Chowrumballah Bridge works I have the honor to state as follows.

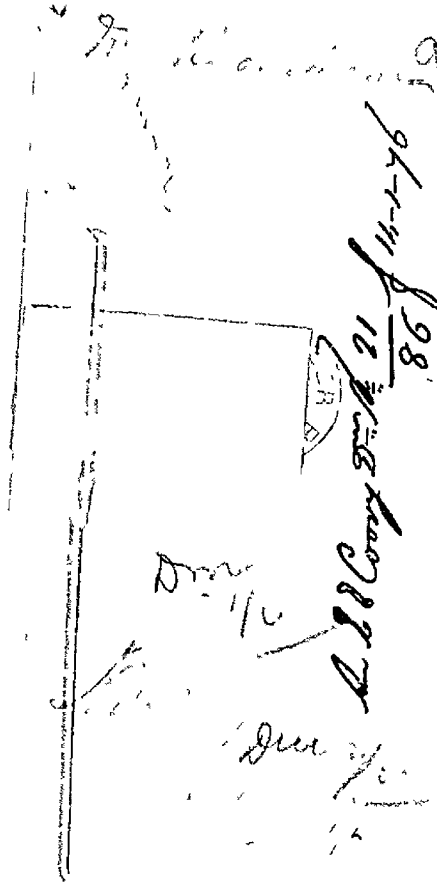
1 — As previously reported the Arch bricks made early in last month are so bad that they cannot be relied upon for the main ribs.

2 — I sent for some of the brickmaulders I had in Kaccan to make a new kiln of bricks. These men have not yet arrived Thanah I expect them a week hence or so. After that I am afraid that there will not be sufficient time to get the Chowrumballah Arches turned.

3. I have therefore the honor to solicit permission to stop work on the Chowrumballah for this season. The Kaccan brick-maulders will be employed in Mercara and by next December I hope to be able to make bricks for the Chowrumballah Arches.

4 — I may add that the Chowrumballah Pairing will be so materially reduced





Mysore Public Works Department
Central Office
No 999 16/4-78
From The Chief Engineer
of Mysore
To The Executive Engineer
Coorg
Dated 15th March 1878.
Despatched
Received
Endorsement of
Subject
Acct Enquiries Sp. 87 477 of the
14th inst soliciting
permission to Sketch
on the Chamundibetta
Bridge —

With reference to the
above, I beg to state that
it is contemplated

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams

No. Dated

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading

Case or Diary No.

If post copy of telegram required

Date of Despatch of above

List of enclosures

(Code word for telegrams)

5
APC—81—15(Cen)MFP (M 1038) 3.5.29—70,000 Pads

No. 21/86

Mysore Public Works Department.

Coorg Division.

From.

The Assistant Engineer

Coorg Division.

Mercara 14th January 1876

To The Assistant Chief Engineer

of Mysore

Sir.

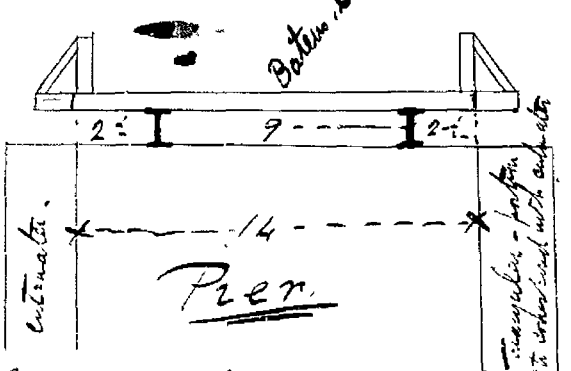
I have the honor to inform you that I yesterday inspected the Chowrimulla bridge work. The brickwork is completed to the amount of over three fourths of the original Estimate. It now remains to pursue the pier and Abutments to such a height as will suit girders, and keep the light iron work so high as to be out of harm's way of large floating trees of which many come down this rapid stream.

2- Herewith is forwarded an Estimate of the probable Cost of completing the Structure as a girder bridge. The items are the same as in the original Estimate i.e. the same, as a great part of the work

as already constructed.

3. The Chief Engineer desired that information should be attained as to whether a 45 feet ~~Iron~~ girder lying in Mysore would do for one Span of the Chowrumhullah, N.? Davies informs me that the "outside measurement inclusive of boxsahib" 15 Ft. 9 ½ Excavation this will not do for the Chowrumhullah.

4. I would suggest that four 40 feet Span steel girders be sent for the Chowrumhullah, and that as much quantity of timber is to be had close by, they be crossed by timber ~~lattice~~ battens, thus.



The cost of the timber work would be if teak wood Rupees 203 — If jungle wood Rupees — 90. 6 —

I would merely mention the time

flooring of Pemkakud bridge at the bottom of the Pennycadad Chaut, to show how good well seasoned timber not covered with Clay or gravel may stand for many years in a wet climate.

The Cost of earthwork to Whroccice is omitted. The Cost from the thickness of the banks will be very small and may be paid for out of the ordinary road Estima

I have the honor to be
Sir
Your most Obedient Servant.

W. Mackenzie Lt
Assistant Engineer
Goor Division

Secunderabad
January
1870

= 560. c. ft.
= 11
= 14
= 16
6 0 7. @ 3-8 tank = 2103
@ 1-8 [illegible] = 901. 11

April

Send Salem — copy to the Supt. of the Madras Workshops and ask if he could at early convenient date [illegible] Estimate for 4 Girders to span 10'6" from Centre to centre (two to each bay) and Drawing to suit & sketch herewith attached any remark in Red. the whole to be despd as little as can be done after Sabbath by ordinary Cart traffic —

The Chief Engineer
Cauvery Division
No The Asst. Chief Engineer
for Mysore.

dated 12th
received 15th January
received

Encls - two.

Dated.

Forward Estimate and
Plan for constructing
Chowrumballa bridge -

not more than Rs 1000/-
be a misprint if so a
ten per cent. increase

Dated 21

No 151 Mysore Pub. Works Deptt.
Central Office.

To,
The General Superintendent
Pub. Works Workshops
Madras.

Sir,

I have the honor to forward a Revised Plan of the Chowra-hulla Bridge in the Coorg Division and to request that you will be good enough to let me know whether you could at your early convenience supply me with a design and estimate for 4 Girders to be spaced 10'-6" from centre to centre (two to each bay) and bearing teak joists with 3 inch planking with gravel, the whole to be kept as light as can be made with safety for ordinary cart traffic — not more than sufficient for a moving load of 1/2 a ton per foot forward.

I have the honor to be
Sir
Your obedient servant
Chief Engineer

1876.

Replied Eq 511 R 10-5-76

No. 31/139.

Public Works Department
Camp Division

From

The Assistant Engineer
Camp Division

To

The Assistant Chief Engineer
of Bengaluru Camp

Sir,

With reference to plan of service Cistern for Thoraneahallah. I have the honor to state that the ground here designed is the most probable highest location to be met with to ascertain from the Ryots of Thoraneahallah, the general statements of the habitants of vicinity. I have that through was made the highest site was ordered on the plan.

I have the honor to be
Sir
Your most obedient servant

Mercara
19th June
76

Assistant Engineer
Camp Division

The Asst Engineer
Coorg Division

Nil

To The Asst Supt Engineer
Gudalore

Memo has been seen
to

dated 19th January.
Recd
Received

24.1.76

Subject

Head Draughtsman
PR
24.1.76

Inform that the high water mark was not entered in the Plan submitted

Will be attended to as soon as plans are received

No 41/153

Mysore Public Works Department.

Coorg Division

From.

The Assistant Engineer

Coorg Division.

Dated Camp. Pambakadoo. 18th January 1876

To The Assistant Chief Engineer

of Mysore & Coorg.

Sir.

I have the honor to inform you that the Channamhulla bridge is a work of such emergency that I have ordered the finishing and last works in anticipation of sanction of the revised Estimate. I very much regret the necessity of going on in anticipation of sanction, I hope that this will be the last case in Coorg as a like proceeding.

2. The heated attempts I have been made to manufacture bricks fitted to suit for the Arches, but all have proved utter failure. I believe that there can be no alteration for the better.

I have the honor to be

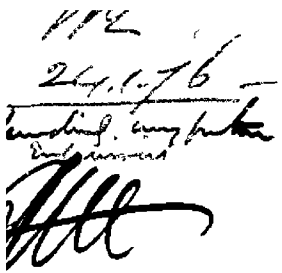
Sir

Your most obedient Servant.

[illegible]

Executive Engineer

Coorg Division



24.6.76

The Assistant Engineer
Roads Division
To The Asst Chief Engineer
Hyderabad.

Dated 18th January
Received 22nd January
Issued

Circle
Daily Sheet

Inform that work has been started at Chowramhallah bridge in anticipation of Sanction & Revised Estimate

Assistant
24.6.76

Ref Journal 10/

Messrs Public Works Department
No 289 Secretary's Office
of 1875-76.

From The Chief Engineer of Mysore

To The Executive Engineer Division

Copy

Dated
Despatched } 24th Jan 1876
Received

Enclosures No

Subject

Acct Lg No 468 of the 18th inst. (Despatch 22d) inviting that as the Chowrambattu Bridge is a work of such emergency, he had ordered the pushing on of the work in anticipation of Govt A/c the Revised Estimate

Noted

Sd/
Nicholls

Rb.
9/1/76

DEPARTMENT.

BRANCH.

Draft

Letter / Memorandum / Telegram

Class for telegrams

Ordinary / Express / Urgent* / Priority / Clear Cl.not

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No. Dated

To

To be issued on

Issued on

st Reminder

nd Reminder

rd Reminder

Sending :

Case or Diary No.

Last post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams.)

S. S.
[illegible]PC—S1—158(Gen!)MFP (M-1993)—3-3-24—50,000 Pads.

PRESIDENCY WORKSHOPS, D.P.W,
Madras, 21st January 1876.

No. 4051

From

THE GENERAL SUPERINTENDENT,
PUBLIC WORKS WORKSHOPS AND STORES.

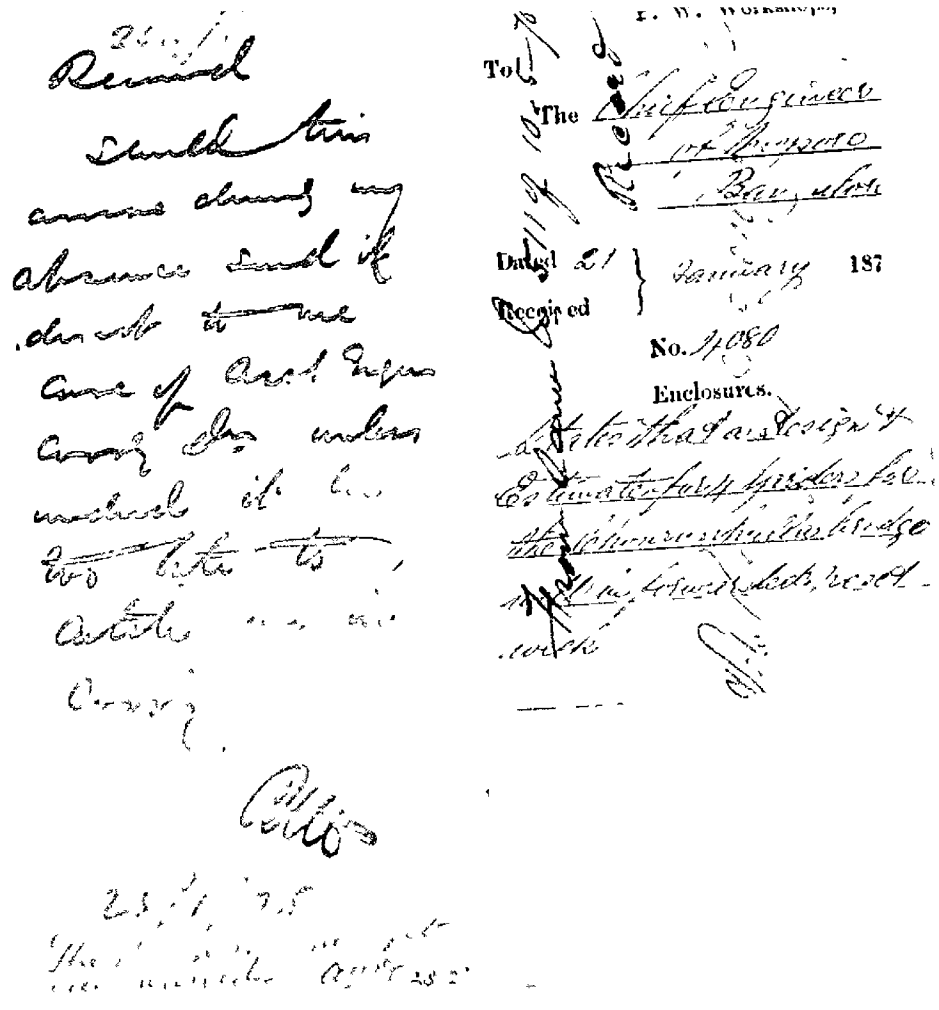
To

THE Chief Engineer & Secy
to Govt

Work expected with your Memorandum dated 18th January 1876 which will be sent to the Secretary of State for Inspection

The wood & iron work to be sent with the Carriage.

[illegible]
for
[illegible]



To

The Superintending
Engineer
Bangalore

Dated 21 January 187

Received

No. 1080

Enclosures.

Letter dated 20th Instt
Estimate for Sluice &c.
of Channenahalli Tank
Plan & Sketch, record
work

PRESIDENCY WORKSHOPS, D.P.W.,
Madras, 10th May 1876

No. 571

FROM

THE GENERAL SUPERINTENDENT,
PUBLIC WORKS WORKSHOPS AND STORES,

TO

THE Chief-Engineer
of Mysore

SIR,

Adverting to my letter No. 40800 21st January 1876, I have now the honor to forward Plan, Specification & Estimate in connection Rupees 5826 - five thousand eight hundred & twenty six, for a wrought iron cattle Girder bridge to be erected at Chowdenhalla on the Cooly Darwaza, which I trust will meet your approval

The revised plan of the Bridge received with your letter No. 180 of the 15th Instant. Cost is herewith returned.

I have the honor to be
Sir
Your most obedient
Servant

[illegible]

To Superintendent
Rds & Bdgs. for
direction. [illegible]
[illegible]

The Chief Secretary
of Lagos

Dated 10 January 1876.
Received

No. 511

Enclosures. 4

Estimate Plan specification & Estimate
amounting to £[illegible] 5826
for erecting Native Cattle
Sheds Stables &c
in Obalende Quarter in the
Colony of Lagos

Copy sent to
the Assistant Engr

To the Asst. Engineer Corp.

Sir,

I have the honor to forward for your consideration & opinion an Estimate prepared by the Chief P.W. Contractors Madras, for two Lattice Girders for the Chunchulla Bridge.

In your letter No 21 of 14th January last you suggested main girders of 40 ft span, to be arranged with inclined bottom 6" thick. The girders in your sketch are spaced 9 ft. apart & the first roadway 2 ft. thick 14 ft. of roadway. The Chief Engineer in sending the enclosed plans & tenders asked for a design & Estimate of girders to be spaced 10'6" from center to center & using Teak joists & 3" Decking. As I cannot efficiently reduce this reference unless I can provide a clear of only 10 ft. (or only 9 ft. if we allow for projection of the flange), and this appears to me to be objectionable in the design.

It is a question whether an arrangement can be made to carry the roadway on the top flanges of the Lattice girders, but if so it seems to me there will be extra expense entailed in increased number of cross bracing, and in making a second set of Chamfered wrought iron plates to be riveted to the top flange. This will also take time in riveting up in situ & may the tenders which call for your last consideration & I will be glad to have early expression of your views on the subject.

I am not quite sure if a true estimate of the

difficulty would not be to order out from ...
here the contractors plant for the 90 ft. Leg, calculat...
to carry the plankers reaching 2m higher, but the ...
again would involve great delay.

I have re...

Cal.
3 — 6.

Enclosure
3 — 6 —

Forward last principal Estimate & drawing; also ... + Specification
in 1871 — last approved original drawing of bridge

Office No. 184 &c. — 96
954,

Reg. No. 1461
Rec'd 27-6-76

From The Asst Engineer
Coorg Division

To The Superintending Engineer
Roads & Buildings Southern

Dated 24

Despatched } June 1876

Received

Enclosures No. 3

General No. 1461 } 1876,
No. 936
8-6-76

Has the honor to acknowledge receipt of Tracing and Estimate of Bhowrunhullah.

If the ironwork be received in September the work can be finished during the hot weather.

It is earnestly requested that the ironwork be not delayed as from January to June the roads are deadly.

W. Lindsay Lt
Assistant Engineer
Coorg Division

Given in my letter
Cl.
27-6.

Submitted
24-6

29/6/76

Mr. Lindsay Asst Engr
Bhowrunhullah
Cl. 1

Return the Tracing &
Estimate for correction
as the details in my letter
dated 24th inst are wrong.

Cl.
29-6.

Returned
29/6/76

DEPARTMENT.

BRANCH.

Letter
Draft Memorandum
Telegram

Dated

Class for telegrams

Ordinary
Express
Urgent*
Priority
Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No.

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams)

S. 5.
M&IPC—81—138(GenI)MFP (M-1933)—2-5-34—50,000 Pads

Superintending Engineers Office
No 1295
1876

From
The Superintending Engr.
of Mysore
(Roads and Buildings branch)
To
The Assistant Engineer
Dated Coorg Division
Despatched
Received 30th June/76.
Enclosures No:
Subject

Assistant Engineer's No 197
957
Letter 24th June 1876,
returning the Sketch
and Estimate of
Chowrumullah
bridge prepared
by the Canal Supt

Letter 24th June 1876

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Dated

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line† — *Only for Foreign Telegrams. †Not for Foreign Telegrams.

No.

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading:

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams.)

S. 5.
[illegible]—91—15a/Gen/MFP—(M 1953)—3-5-34—50 000 Pads.

No. 1218/252 E:1

Assistant Engineers Office
Coorg Division

Dated Camp Fraserpett 29th July 1876

From

The Assistant Engineer
Coorg Division

To

The Superintending Engineer
Road & Building Branch

Chomkulla Bridge

Reference.

Assistant Engineers No 142 of 14th June 1876
Ass't Chief Engineers No 1906 of 28th June 1876
Coo'g " No 209 " 13th " 9th October 1876
Chief Engineers No 2934 of 26th September "
Coo'g " No 23 " 11th " 9th January 1877
Do " No 182 of 3rd February "
Ass't Chief " No 141 " 4th " 16th " "
Coo'g " No 70 " 1st March "
Coo'g Chief " No 305 " 7th " "
Ass't Engineers No 79 of 24th " "
Do Chief " No 428 " 27th " "
Coo'g Engrs No 263 " 13th September "
Coo'g Chief Engrs Memo of 26 " "
Do No 2965 of 26th " "
Ass't Engineers No 271 " 14th October "
" Asst " No 1491 " 29th " "
Coo'g Engineers No 212 " 30th June 1876
Chief " No 916 " 7th July "
Supdt " No 468 " 18th August "
Do " No 284 " 25th January 1877
Do " No 935 " 30th June "

Rec[d] Despt No 41 of the 3[rd] Janry
1877
Do - No 187/95 of 24[th] June 1876.

Sir

With reference to your No 931 Dated
June 1876 I have the honor to make the following
remarks -

The Chowringhee is one of the three
streams, which cross the Diamond Harbour Road
the main route from Hoogly to Diamond Harbour, and by
which a great deal of the rice imported to Diamond
and Saugor Districts, is brought in -

These streams have hitherto been crossed
during the monsoon, by Small Canoes, Bamboo Load
have their wheels taken off before being ferried over,
and their Loads Cattle and Rice Meal. The Chowringhee
is much the most rapid of the three streams, and
the passage of the Canoes over this stream was often
impossible for many days consecutively - The
Chowringhee is intended for a regular Ferry
the other two streams the Mettie & the Dhadapore
will this season be provided with substantial Bridges
Diamond so that Carts may be passed across
without unloading - Consequently the Chowringhee
Bridge be completed this season, this road will
open for traffic throughout the monsoon - As soon
good Ferries should have been placed on the Dhadapore
and Mettie streams the Chowringhee will be the
unfrequented to traffic - Either ferry becomes

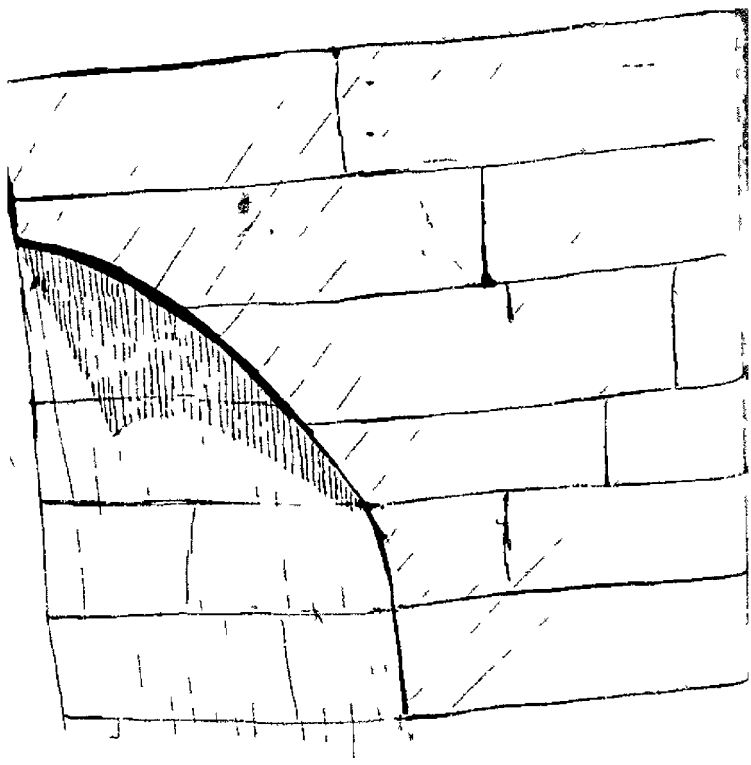
especially necessary to have the Chowringhee completed before the Monsoon. This would
argument
also be an additional argument against the proposal
continued in pursuance of your Nº 931. D.S. to set out
two companies of Sepoys from Hansi until
troops can be conveniently possible to have them and
before March, and after March the climate
is deadly.

Since writing my Nº 21 Dated 24th January
had
Col. Shaw has been to think that timber flooring
is considered to bridges in Camp. On the approach to
to Peer in Body Pieces of Planks bridge have
been made, repair, and the road planting of the
Grand Trunk Road from my Cantonment, have been
to elaborate. I would therefore draw on the
idea of planting for the Chowringhee.

I think that the best thing to be done,
is to purchase a pair of the ordinary Sepoy tents,
with a fourteen feet roof and roof corrugated roadway.
This is light, easily packed on pack bullocks. There
already had one of these from the Engineer Department
Dept for the Chowringhee Cantonment in January last.
Hansi Detach, and one for the Karnal detachment
the bottom of the Peer in Body Chowringhee
District. Each plate for the roof and the

which now has all clear without much appearance of the aid of a couple of Crab Winches - Two spans of 40 feet, is a very common - Number and most likely more or two such bridges are now in stock.

It will be necessary that the piers, decreasing in water, is only 18 feet clear length. the [redacted] Feet x best stone that can be procured is to be laid in the bed of the Mill & close by - and the upper four feet of the cut-water may be made to small rubble as to have a foot of the top, & Ashlar under - thus making the Pier 18 feet long.



The Extra expence in stone cutting would be

Scarcely anything, and the security of the Bridge, would be as perfect as necessary.

VV

I refer to the drawings of Bridge, showing the Lattice bars made and as a Lattice Double span of 10-be on stock that ought to be used of a plate Girder would take time - For my own part, I would prefer a plate, simply because I would have more reliance already put up two plate Girders, but if a Lattice can be made Commodiously and Tastefully as possible then a Lattice will suit I can have a Lattice erected upon a better plan for a Lattice be such as shown, some very good smiths in Inverness and Beauly, I would completely abandon the idea of having the non-driving on the left of the Girder, on account of Extra Mason work required, as pointed out in your favour No. 931 - and also the dispensing of Parapet or railing -

The Work will be done in November - From November till January the Locality is Comparatively healthy. Common Jungle wood for to will answer a Centring for erection of Girders - The Stone will then be about two feet deep - and the Arch can be completed by end of December.

I have to be of Course desirable if the Girders could be made and mason after being put up by being bolted together. The Girder per second might be

w. bolted together with covering plates to connect
abutting ends of flanges - No iron bed plates will
be required. Small cast steel slab of flange
sphere
shape can be had. Spec'n ~~of~~ w. 2½" diameter, of
the abutment ends would each more freely
than as steel.

I have the honor to be
Sir
Your Most Obedient Servant
W. Hall CE
Assistant Engineer
Corps Engineers

Cubierta
Bajo
Bl

Nº 262
1818

29 de Sept. 1818

Los celestiales Señores
Sept. P. Pr. Mons. Ma
24/8

Ano
6/7/26

To the Supt^dt

P. W. Madathupet - Madras.

Sir,

With reference to your letter No 571 of 10 May submitting designs and Estimates for two 40 ft. Cattle piers for the Chinna Kallaly river in Coorg, I have the honor to observe that apparently from the instructions given in this Office No 140 of 16/11/96 not having been sufficiently full the serious mistake has been made of making the roadway only 10½ ft. wide instead of 14 ft. clear which latter width is absolutely required.

I return herewith the drawings & Estimate & shall feel much obliged by your modifying the dimensions & quantities to suit the requirement of - 14 ft. road clear from inner edge to inner edge of T/I flanges. The cost of Teakwood joists & flooring need not be included in your estimate.

I have &c.

CHS.

24-8.

Re 2164
24-8-76

Office of the Superintendent
Public Works
Police
Quetta

No. 2847
Dated the 21st August 1876

892
1876

Replied: 2847
21st October 1876

Superintendent
Commissioner
Sind

PRESIDENCY WORKSHOPS, D. P. W.
Madras, 31st August 1876.

No. 2092

From

THE GENERAL SUPERINTENDENT,
PUBLIC WORKS WORKSHOPS AND STORES,

To

THE Offg Superintending Engineer
Cuddapah

SIR,

Enclosures.

In reply to your letter No 2164 of 24th instant, I have the honor to state that the wrought portion of the Pulivendla Bridge will be ready about the end of September.

The Workshop establishment will be in position to commence the work before December or January next with this Office Circular No 566, dated 22d August 1876.

I have &c.

for

Gen Superintendent

The General Superintendent,
P. W. Workshops,

To
The

Dated
Despatched
Received

No.

Enclosures.

122

Mysore Public Works Depart.

No. 2308

1876

From

The Supt. Engineer
Roads & Buildings

To

The Assistant Engineer
Coorg Division

Dated
Despatched
Received } 5th September 1876.

Enclosures Nos.
Subject

Assistant Engineer's
No. 1218 dated 29th July
last
regarding Chowmahalla
bridge

With reference to the
above, forwarded

Supt's Let. No. 332
1883

15-7-76

File

Serial

19

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Dated

No.

To

Class for telegrams	Ordinary / Express / Urgent* / Priority / Clear Line†	*Only for Foreign Telegrams. †Not for Foreign Telegrams.

Issued on

To be issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams)

5.
SIPC—S1—15s(Gen)MFP (M 1953)—2 5 34—50 lacs Pads.

To The Inland Supdt
D. P.W. Southships - Ramna.

Sir,

Referring to your letter No 2092 of the 31st Aug 76 stating that the Commissioner of Chumbulal bridge could not be put in hand until decision on a notification in your Circular No 866 of the 22nd April 1876 I have the honor to state that the Circular notification is not to hand in my Office & I should feel obliged if you would be kind enough to send me a copy of it.

I would bring to your notice that this bridge, which is on an important line of road in Camp, is really urgently required. The working season during which operations can be carried on in the interior is very limited indeed, & if the bridges are not finished in time to admit of the road remaining closed for a great deal of traffic during another season. Under the circumstances I would ask if the ruling could not be relaxed in favour of this work.

Cls.

2312

7—9.

Copy to Asst Engr R. Camp.

7th September 76

To

The General Supt.

P. W. Stores

Madras

No 566.

CIRCULAR.

To

SUPERINTENDING AND DISTRICT ENGINEERS,

FOR COMMUNICATION TO ALL RANGE OFFICERS,

IN consequence of the intended removal of the P. W. Stores and Workshops to Royapooram after October next, the undersigned has the honor to intimate that orders for work cannot be attended to after 31st August until January 1877. Indents for stores will be complied with up to 30th September next.

J. N. GRAINGER, C. E.,

General Supt., P. W. Stores and Workshops.

PUBLIC WORKS STORES AND WORKSHOP DEPT.,
Chepauk,
22nd April 1876.

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Dated

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams

No.

To

Issued on

To be issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading:

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams)

S S
M/12C—81—158(GenII)MFP—(M 1993)—3 5 34—50 000 Pads

PRESIDENCY WORKSHOPS, D. P. W
Madras, 12th September 1876.

No. 2345

From

THE GENERAL SUPERINTENDENT,
PUBLIC WORKS WORKSHOPS AND STORES,

To

THE Superintending Engineer
Roads & Buildings
Presidency

SIR,

With reference to your letter dated 7th September 1876, I have the honor to enclose copy of the correspondence referred to in my letter No. 2092 dated 31st August, and to request to be favored from the Chief Engineer's office with a completed requisition for the supply of the stores required on account of the removal of the shops to the new premises, and also to request that the stores may be supplied by the end of January 1877.

I have the honor to be
Sir
Your most obedient servant
[illegible]
Superintendent

Copy to Comy
Cl.
1—9

The General ... P. W. Workshops,

To
The Chief Engineer
Roads & Buildings
Bangalore

Dated 12 } September 1876.
Despatched 12 }
Received 23

No. 2345

Enclosures. One
Lr. from Secretary to Govt. P.W.D.
dated 9th Septr. 1876
2092 Sq. yds. Stone
Abstract
Requisition

Copy to Comy
Cl.
1—9

Orders to
13/9

Mysore Public Works Departm

No. 2434. 1876

From

The Supg. Engineer
Roads & Buildings

To

The Executive Engineer
Coorg Division

Dated
Despatched } 12th September
Received } 1876.

Enclosures No. 2

Subject

Chowmbullen bridge

In continuation of this Office No. 2312 of this date and forwards for information copy of letter No. 2345 of this.

Do

No. 332 / 1883 of 1879-80

BRANCH

Letter
Memorandum
Telegram

Draft

Dated

Class for telegrams

Ordinary
Express
Urgent*
Priority
Clear Light

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No.

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(To be used for telegrams)

S. S.
M&LPC—S1—135(GenI)MFP—(M 1953)—3-3-34—50,000 Pads

Ref. 2744

18/9/76

Memo to Executive Engineer Coorg Division

Subject Superintending Engineer Coorg Road and Building Branch

Dated 15th September 1876.

Despatched 19th do

Received

Enclosures No.

General No. 352

No. 1033 } 1876

His No. 2308, dated 6th Instant.

With reference to Abstract and Estimate Amount Chowrama-Lingla Bridge the Undersigned has the honor to state that unless the Bridge is ready before the end of January the locality will be over-flowed

Lee letter to the Secretary Supt. P.W. Stores Madras 23/9/76

Reference from D. Engineer. Cl. 22-9.

Submitted 23/9/76

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Dated

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No.

To

Issued on

To be issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading:

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams.)

2—51—16s,Genl)MFP—(M-1953)—3 5-34—50,000 Pads.

98

To The Superintending Engineer,

"

Madras.

Sir,

With reference to your letter No 2092 of 31 August, and 2945 of 12th September, I have the honour to request you will be good enough to decide once with the question of the modification of the finishes as pointed out in my No 2164 of 24th August, so that I may obtain the Chief Commissioner's sanction & the Revised Estimate and thus avoid any further possible delay in the matter. I very much regret you are unable to furnish me the bridge upon the end of January, as this will I fear entail the postponement of the erection for another year, the channel at Chamballi being extremely unhealthy after January.

Cu.

23-9.

23rd September 1876

To

The Superintendent

P. W. Stores

Inachuse

Specification of
Chowrenhullah Bridge

The Bridge is in two Spans of 140 feet ... to (in the clear) supported in centre by Brownlay Piers

The Roadway of each Span is supported on the lower flanges of two wrought iron lattice girders 3 3/4 feet deep, 145 feet long over all, ... Spaced 15 feet apart (centre to centre) and the ends of the girders rest on Cast iron pedestals let into the top of the masonry on Piers & Abutments as shown in the Plan.

The cross joists supporting the Planking of Roadway are to be about 15 feet long by ... inches wide and 12 inches deep - Spaced 3 feet apart at centres - the ends resting on the ... of lower flanges of main girders to which they are fastened by being bolted to Cast iron brackets, one on each side at both ends of joist as shown in the Plan.

The joists being to be fastened to the Joists by wrought screws with double dimensions of heads to be given in the estimate underscored in the Plan.

Presidency Workshops
Madras 21 October 1878

J. Strange
Gen. Engineer & Architect &c &c

Revised Detailed Estimate of the probable cost of constructing the Shawsheen River Iron Lattice Girder Bridge of two Spans of 150 feet each, with a Roadway of 15 feet on centres to centre of girders.

Details of Work	No. of Pieces	Dimensions Length Each	Dimensions Length Total	Scantling Thickness	Scantling Width	Cubic Contents
Girders Specification in 6 3/4 Large.						
Angle iron for flange	2	97 1/2	195	3 x 3	1/2	2047 1/2
do joint straight	12	2	24	2 1/2 x 2 1/2	3/8	156
Web flange plate at centre	1	14	14	12"	1/2"	280
do Web ends	2	15 1/2	31	12"	3/4"	465
Web joint cover plates	4	1 1/2	6	12"	3/8"	90
do do do ends Web to flange	8	1 1/2	12	5"	3/8"	145
Bottom flange plate at centre	1	14	14	12"	3/8"	210
do Web ends	2	15 1/2	31	12"	3/4"	465
Bottom joint cover plates	4	1 1/2	6	12"	3/8"	90
do do do ends Web to flange	8	1 1/2	12	5"	3/8"	145
Web flange plates	2	3 3/4	7 1/2	11"	3/8"	113 1/2
Web pieces between angle irons	96	5"	80	6"	1/2"	307
Bottom pieces between angle irons	96	5"	80	3"	5/8"	450
Web pieces between latter bars in centre	22	5"	9 1/2	5"	1/2"	46
Web pieces between grooved pieces and Lattice	184	4"	62	3 1/2	1"	720
Lattice bars in centre	16	4 1/2	72	5"	1/2	360
do do on the side	8	4 1/2	36	5 1/2	1/2	200
do do	8	4 1/2	36	4"	1/2	240
do do	8	4 1/2	36	4 1/2	1/2	261
do do	4	4 1/2	18	4 1/2	3/4	302
Add weight due to curved girders exceeding straight						6822
Total weight of Iron for Girders						57355

Details of Work

Bolts with heads for fastening gratings to cast iron brackets						
Bolts with heads for fastening brackets to cross flange of girder	88	4"	1/4	3/4"	diam	61
Bolts hexagonal 3/4"	176					56
Total weight of bolts for one girder						2.13
do for three girders						
Rivets						
Rivets 1 inch diameter for cross girders	250	4"	94	3/4"	dia	26
do do 2 do	750	2 3/4	172	20	"	4
do do 3 do	50	2 1/4	9	30	"	1
Weight of rivets for one girder						0
Total weight for three girders						
Cast Iron work						
Bed plates at abutments	4	2 1/2	10	14"	1 1/2	
do curved plates	2	5"	10"	14"	1 1/2	
Brackets for fitting girders	88	18"	132	5"	1"	
Total weight of cast iron						
Wrought Iron						
Pattern Plates on abutments & towers						
Planing bed plates 6 in Number						
Bolts & holes in abutments						

Revised Abstract Estimate of constructing the Shoeburyness Lattice Girder Bridge for Iron work only.

Description of Work	Rate	Per	Amount	Total
lbs Wrought iron wing girders	380	Ton	34 11	
lbs Wrought iron bolts and nuts	" 6 6	lbs	38 6 1/2	
lbs Lawmoor iron rivets	" 4	"	6 8 0	
lbs Cast iron work	180	Ton	27 17	
Labor for cast iron work			5 4	
Cost of putting the bridge together and taking out to pieces			12 5	
Painting, marking and packing			5 0	
Carts here to Railway Station including charges of loading into Railway trucks	1 4	Cart	1 4 0	
			501 5 3	
Contingencies at 5 per cent			25 1 5	
Total Estimate		Rupees		526 6

Workshops
1st October 1856

B. Lindsey
Superintendent Engineer

137

PRESIDENCY WORKSHOPS, D. P. W
Madras, 21st October 187[illegible].

No. 2847

From

THE GENERAL SUPERINTENDENT,
PUBLIC WORKS WORKSHOPS AND STORES,

To

THE [illegible]

SIR,

[illegible]

I am
Sir
Your most obedient servant
[illegible]
Superintendent

Submitted
Cobb
7/4/76

To

The Secretary of
U. S. Legation
Japan

Dated
Despatched 27 October 1876.
Received

No. 2847

Enclosures. 1

Statement of Receipts & Disbursements of Legation to Japan for the quarter ending Sept. 30th 1876

Mysore Public Works Department

№ 1503

1877

From

The Superintending Engineer
Roads & Buildings Branch

To

The Superintendent
P.W. Stores and
Workshop Madras

Dated
Despatched
Received } 1st April/77.

Enclosures Nil
Subject

C. Memo No. 345 dt 1/7/76

I have the honor to request that you will be good enough to state if you are now prepared to receive orders for the manufacture of new Binders required for the use of Civil Depts

&c &c

Rec'd 25th April 1877

Replied 27/

No. 1426 of 26th April 1877 from Secy to Govt

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Dated

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No.

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading :

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams.)

S. 5.
M&P.C.—81—158(Genl)MFP.—(M 1958)—3-5-34—50,000 Pads

Mysore Public Works Department

No. 1426
1877

From

The Superintending Engineer
Roads & Buildings Branch

To

— Exclusive Comp.

Date 26 — 4

Despatched

Received

Enclosures No.

Subject

Form Annual Statement
No 1 for 1876 —

Returns for correction &
Early transmission of
Annual Statement for
Chamarajnagar Division

Ch

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Dated

No.

Class for telegrams: Ordinary / Express / Urgent* / Priority / (Clear Line)†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Endorsement:

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams)

S1—158(Genl)MFP—(M 1933)—9 5 34—10 000 Pads

Presidency Workshops, P. W. D.

Madras, 25 April 1877.

No. 371

From

The General Superintendent,
P. W. Workshops and Stores,

To

The Superintending Engineer of
Mysore Roads & Buildings
Bangalore.

Despatched 25 April 1877.

Received

Enclosure.

Your No. 323 dated 18 April 77.

With reference
to the correspondence
noted in the margin, I am to state
that the Workshops
are prepared to supply
the articles mentioned

DEPARTMENT.

BRANCH.

Draft

Letter / Memorandum / Telegram

Dated

No.

To

Class for telegrams

Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading :

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams)

C—S1—139(Genl)MFP (M 1939)—3-7-34—50,000 Pads

No. 910
201

Mysore Public Works Department
Coorg Division.

From The Executive Engineer
Coorg Division.
Mercara. 23rd April 1897.

To The Superintending Engineer
Roads and Buildings Branch

Sir.

I have the honor to request that you will please write to the Office the revised Estimate for Channenhalla Bridge to allow of certain Corrections as noted in the Minute.

I have the honor to be
Sir
Your most obedient Servant.

Executive Engineer
Coorg Division.

This has been disposed

R

Read
30/4/17

Plan Mr and.

Cls.
10—4.

The Ex: engineer
Coorg Divn.

To

The Supdg: Engineer
P.W.D. Branch.

Dated. 22nd April

No. 910/57
201 30-4-17

Requesting return
of Estimate received
for Chowkhallah
Bridge —

Mysore Public Works Department

No 1507

1877/78.

From

The Superintending Engineer
Roads & Buildgs Branch

To

The Executive Engineer
Coorg Division

Dated

Despatched } 20 April 1877.
Received

Enclosures No 2

Subject

Executive Engineers
C.V. No 910/201 of the 23rd
April 1877 and his
Telegram of this
date.

Answered in this

Despatch No 1014 dated 20th April 1877
235

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No. Dated

To

To be issued on	Issued on
1st Reminder	
2nd Reminder	
3rd Reminder	
Heading:	
Case or Diary No.	
If post copy of telegram required	
Date of despatch of above	
List of enclosures	

(Code word for telegrams.)

S. S.
(GSIPC—81—136(Gen))MFP—(M-1953)—3-5-54—50,000 Pads.

Let me know that
alteration has been made.

Cl
11-5

From. Regd No 1999
The Executive Engineer 1-5-77
Coorg Division.

To.
The Superintending Engineer.
Roads & Buildings Branch.
Mysore & Coorg.

Dated.
Despatched. 6th May 1877
Received.

ENCLOSURES NO. Three.

General No. 1017
235 1877
No.

Sept me Sketches

T.

Draft

Letter
Memorandum
Telegram

Dated

Class for telegrams

Ordinary
Express
Urgent*
Priority
Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No.

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams)

S. S.
M&LC—S1—188(Genl)MFP—(M 1938)—8-7-34—50,000 Pads

... & Co.

Byculla Iron Works.

BOMBAY, 21st January 1876

No. 143

To The Officiating Superintending Engineer
Mysore Roads & Buildings Branch
Bangalore

Dear Sir,

We beg to enclose ~~Bill of Lading and~~ Invoice No. 1112 for the Goods specified below shipped by the S.S. Goa to Madras
To Messrs Binny & Co on application with
your Order. As we are not responsible for damage, or loss of cargo after it is placed on board the Steamer, we would recommend you in the event of such occurring, your making a claim on the Captain or Owners previous to the departure from your port, or if that is not possible on the next voyage of the Steamer, you as Consignee being the only party who can make a legal claim.

We are Dear Sir,
Yours faithfully,
for W. NICOL & Co.

* No 3467 of 1875 11 September & D. [illegible]

1 Iron Lattice Bridge in 61 Packages viz:
12 Large Pieces of Girders, 2 2 Cross Girders
16 Small plates with bolts. 4 Bed plates
2 Cradle Centerings. 44 Iron Clamps for Girders
4 " " 20 Small W. I. rollers.
1 " " Iron Bolts and nuts.

DEPARTMENT.

BRANCH.

Draft

Letter / Memorandum / Telegram

Dated

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No.

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading:

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams)

S 5
[illegible]C—S1—158(Genl)MFP—(M 1993)—3 5 34—50 000 Pads

No. 1112

BYCULLA IRON WORKS, ELPHINSTONE C...

The Officiating Superintending Engineer, Bombay 19th January 1...

Bought of W. Nicol & Co.

...NORKS
...YCULLA
...STORES.

ENGINEERS, IRON FOUNDERS &
IRON & HARDWARE MERCHANTS.
MANUFACTURERS OF
Iron Roofs, Girder, Bridges, Cranes Ornamental & General Castings,
IRRIGATION MINING & AGRICULTURAL MACHINERY.
Contractors for the supply of Railway Plant Engineers & Mechanics Tools Portable & Stationary
Steam Engines Boilers Gearing Machinery Mills & other Works for Manufactories of every
description

TERMS, CASH IN A MONTH, INTEREST CHARGED ON ACCOUNTS UNPAID ONE MONTH AFTER DELIVERY

We carry care in packing and despatching Goods but we do not hold ourselves responsible for loss, breakage or short delivery after the goods have been delivered to the carriers, whether by Rail, Steamer, Vessel, Raft or otherwise.

	Rs.	A.	P.
Lattice Bridge of 2 spans with 2 Girders with Clamps and ... Bed plates with 20 ro Clevs. complete	1 16 3	3 24	15/27 5831 5 9

E. & O. E.
for W. Nicol & Co

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Dated

No.

To

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading:

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams.)

...
[illegible]PC—St—153(Genl)MFP - (M 1993)—3 5 34—50 000 Pads

No 1112

BYCULLA IRON WORKS, ELPHINSTONE CIRCL

The Officiating Superintending Engineer, Khyrpore Rohri Building Division

Camdran 19th January 18

Bought of W. Nicol & Co

Bom. Engr. Order. Bridges. Frames Ornamental & General Castings.

WORKS BYCULLA & SYDRE.

ENGINEERS, IRON FOUNDERS &
IRON & HARDWARE MERCHANTS.
MANUFACTURERS OF
IRRIGATION MINING & AGRICULTURAL MACHINERY

Contractors for the supplying of Railway Plant Engineers & Mechanics Tools Portable & Stationary Steam Engines Boilers Gearing Blacksmiths Mills & other Plant for Manufacturers of every description

TERMS, CASH IN A MONTH. INTEREST CHARGED ON ACCOUNTS UNPAID ONE MONTH AFTER DELIVERY

We take every care in packing and despatching Goods but we do not hold ourselves responsible for loss by rail or sea nor any short delivery after the goods have been delivered to the carriers whether by Rail Steamer Native craft or otherwise.

		Rs	A	P
1 Pattern Bridge of 2 Arches with Gardens with Clamps and				
1 iron Bed plate with 20 rollers complete	1	16	3	41
	per	5831	5	9

E. E.
Mr. Ry. &c
Cheque

File No.

Serial No.

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Dated

Ordinary / Express / Urgent / Priority / Clear Line

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No.

To

ss for telegrams

Issued on

To be issued on

st Reminder

2nd Reminder

3rd Reminder

Heading

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams)

S 5.
MG12C—S1—158(Genl)MFP—(M 1943) 3-5 34 50 000 Pads

Hy. Mac Public Works Dept. Bombay
No 275 1877-78
From
The Acting Engineer
for Harbours
Roads & Bridges &c &c.
To
Messrs Binny & Co.
Dated
Despatched } 25 Jany
Received
Enclosures
Subject

Letter No 143 of this
Dept dated 25th January 1878
from Messrs Nicol
and Co, Bombay
intimating their despatch
ex S.S. Goa / Sir
Lattice Bridge in 6

Letter No 143 of 26-2-78 to Messrs Nicol & Co Bombay
Letter No 275 of 25th January 1878

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

D

Ordinary / Express / Urgent* / Priority / Clear Line†

Class for telegrams

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No.

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading:

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams)

No. 228
37 187

5-15
6-2-78

From

To

Dated
Despatched
Received

Enclosures No.

General No. 713
No. 37 } 187 —7

Class for tele

To be issue

1st Reminder

2nd Reminder

3rd Reminder

Heading :

Case or Diary No.

If post copy of telegra

Date of despatch of al

List of enclosures

Year 1897 — Sir, Correspondence of works to be carried on in November during the present year a great progress reported was effected but should it be necessary it is to be completed at once.

Charles D Powell
Chairman

Assistant Engineer

Engineer

S. S.
M&IPC—SI—158(Genl)MFP—(M-1983)—3-5-34—50,000 Pads.

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Dated

No.

To

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear (Line)

*Only for Foreign Telegrams.

(Not for Foreign Telegrams.

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams)

5.
SIPC—S1—159(Genl)MFP—(M 1989)—3-3-34—50,000 Pads

R. 276/30 Rec'd 12-2-78 No 631

1878.

From The Assistant Engineer
Coorg Div

To The Secy Engineer
M&B Branch

Recd. C.S. 13-2-78

Dated
Despatched 7th February 1878
Received

Enclosures No.

General No. 276 / No. 8 } 1878—7.

(Construction of Bridge

No 6

With reference to the charge
& the forwarding of the
enclosed drawing the present
favour the undersigned has
the honour to solicit from
your Honour a Sanction
to the Estimate explanatory

In Original No 64/47 dated 6th instant and to state that the total Cost of Catchment work up to date No 37/37 for 337 C/ft thereby giving a rate of No 5-3-1 per C/ft against an Estimate rate of No 3-8 - and request that the extra Cost due to high rate of Wages may be passed in account the work being nearly Complete.

Mar Secy Bo't Rec'd

King

Asst Engr

Engr

Supt

1st E

2nd I

3rd I

Heac

Case

If pc

Dat

List

G1P0—S1—15-(Gen)MFP (M 1033) 9.7.34 —20,000 [illegible]

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Dated

Ordinary / Express / Urgent* / Priority / Clear Line†	*Only for Foreign Telegrams. †Not for Foreign Telegrams.	No.

Class for telegrams

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading :

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams.)

S. 6.
[MGIPC—51—155(Genl)MPP—(M-1983)—3-5-34—30,000 Pads.

No 64
1849.

Mercara
Date 6th February 18

From

The Officer in charge of
No 1 Sub Division

To

The Assistant Engineer
Coorg Division

Sir

I beg to submit the following Report for your information in connection with the Chowrumbully Bridge - Explaining particularly the Cause of high Rate on Sub Head Contingent work.

II In the first Place I must bring to notice that the Portion of Superstructure left for the Cart way was the most difficult, and therefore must Expend more than the rest being the last 9 feet of the Circumference has to be Arranged to suit the same as if the work were Cutting by New - Rate than 3 Rate of the Coolies holding Sheets by Day for Receiving the Stones to their Places on the Face were Removed Jelled in the Jungle and brought to Site

III It is generally the Case in all large works of this description that the Rates for the lower Courses should be lower than the upper so that the Average Cost would be within Estimate Limits and that in proportion Small Quantities of work bearing all Charges that should

have been dispensed with If Carried out in a
larger section Cannot therefore be Considered Unreasonably Expensive in Comparision with what
had been Carried out—

IV The Angle of the Cutwater being obtuse
was Smoothed great difficulty in Rig work as
the Stone Could Easily be Much more easily squared
Each Cut Acute or obtuse— In this Case there
was a risk when Setting the work 245 Cubic
feet of dressed stone— on which on account of
the Cutwater there has been a Clear wastage of
50 Cubic feet or 102-5-6 Rs which Increased the
Value of Stone Landed to Rs 2-9-2 per Cubic foot—
Each Course of Cutstone in the Pier inclusive of
Cutwater Contains 26 Cubic feet And only ½
Courses were got out of 245 Cubic feet — with
the greatest Economy Exercised— As the Stone-
Cutters employed were Loath to prepare any
more Stones on account of Extreme Inclemency
of the Locality—

V — The work that has been Executed this
Season I beg respectfully to State has been
Brought with difficulty and danger, as the
Stones from 6 to 8 Cubic feet Solidity had to be
Lifted up an inclined Plane to a height of
from 12 to 17 feet— And when the work Commenced
Lime had to be Carried from Mercara as far as
the Hatty River — And thence Conveyed By Pack
Bullocks to Moorundulla which again increased
the Value of Lime to 5 annas more per Candy

1st Candy Man if purchased during the day
week — In Consideration of all these drawbacks
I beg respectfully that the Explanation Given will
be accepted —

I Beg to Remain
Sir
Your most obt Servant
Edward Morton
Overseer in charge
of Post Sent Division —

Of. No. I Sub Division

To The Assistant Engineer
Coorg Division

Dated 6th
Despatched February 1878

No. 64
49

-Subject-

Submits Report
in Connection with the
Chowrambulla Bridge
Explaining Particulars
the Cause of high Rate
on Sub Head Cut Stone work

Explanation of
the high rate for cut stone
work executed during this
season & state the total
cost over the Estimate rate
which amount request may
be passed in account

7.2.78

Total Cost = Cft. 337-1757-8-7-
Rate = Cft. 5-3-5

8/2/78

Dated 26/7/88.

To The Executive Engineer
Central Bangalore Division
Despatched
Received 26 July 1888.

Enclosures No.
General do. /
do. } 187

Confirmation of
the Office Memo
of the 26th June last
requesting the Executive
Engineer will be pleased
to furnish
the

Iron bridge when all the parts have been received Complete

Col.

Captain R.E.

F.G. Light Cymru

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Dated

No.

To

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading :

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams.)

S. S.
MGIPC—S1—155(Genl)MFP—(M-1953)—3-5-34—50,000 Pads

Received 1189

1879 8/5-3-78

From The Executive Engineer

To Bangalore Kolar &c.

The Superintending Engr

Dated 16th Roads & Buildings

Despatched

Received 5 March 1878

Enclosures No.

Emerald No. 181

No. 194 } 187

Your No. 7730 of 28 ultimo

regarding to submit for

inspection the Cohara nullah

Iron Bridge -

Have the honor to report

that the Bridge is now

fit for and ready for

on inspection –

Officer Major R.E.

Executive Engineer

Bangalore Kolar &c.

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Dated

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No.

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams)

No 257

Memorandum.

The accompanying Revised Estimate of Rs. 19,878 for the Chunchallah bridge in Coorg is submitted for approval of H.E.: Chief Engineer & Secty in view to the sanction of the Chief Comr's being obtained thereto.

2.- The Chunchallah is a deep and rapid stream intersecting the main road from Mercara to Codlipett. It is a serious obstacle to traffic during the monsoon months, and it was decided many years ago to bridge it. After much discussion as to the waterway required, best design to adopt, &c. an Estimate of Rs. 9460 — afterwards revised to Rs. 10,320 — providing ten brick arches of 40 ft span each, was sanctioned. After several trials, however, it was found impossible to manufacture in the neighborhood bricks sufficiently strong to take into safety the pressure of arches of this span, and Col: Sankey consequently decided to substitute iron girders for the masonry arches sanctioned — in fact the failure to make from the clay available bricks equal to the thrust left no other alternative.

The Supdt Public Works Shops, Madras, sent in an Estimate of Rs. 5270 (for iron work only) in October 76, but was unable subsequently to take up the work, in consequence first of a change of premises, & afterwards from all his hands being employed on manufacture of tools for railway works. The Chief Engineer, Col. Sankey, then directed the acceptance of a tender for the girders received from Messrs Nicol & Co.

of Hembury, and it is on the Tender that the Revised Estimate now submitted is based.

4 — The large excess over the original sanction is, it is needless to observe, mainly due to the substitution of iron girders for masonry arches. The details of piers, wings, abutments, &c, remain substantially the same as originally designed. It may perhaps be thought that sufficient consideration was not given to the project in the first instance — that a design might have been obtained if proper bricks could be manufactured by proposing arches of low rise & large span — but it must be remembered that the country is exceedingly difficult, carried with great & deadly that work can only be carried on three months each year, all of which difficulties militate against local manufacture. Bricks fit enough for piers & abutments were made, but not sound enough for archwork.

5 — The lattice girders designed by Brick & Co. are light & handy & fair strength enough for what is required. It is much to be regretted that from various unavoidable causes another year has passed away without any contract having been let for finishing the bridge.

Ch.

23 - J.C.

30th March 1875

Dy Chief Engr

Engineer

No 1230

Letter Office No 1341 dated 8th March 1875 & 88 Comp Nos

3-4-78.

My dear Innes,

The whole of the work (Chamkullah Bridge) has been done barring the piping of the piers, which are now in store, cutting off teeth for flowing, & finishing up. — It is a long answer to your 40 ft. bridge, but the rates in that part of Cuttack & the inundation is appalling. Next year, or even this, there will be a cart

little to pay, as the fiddler has been paid for last year & work is as a rule all done

When we all dined today & I was working at home. He was ending for Mrs Reynolds consequently - till tomorrow, when I shall tell him to take up all the papers. Sankey ordered me to get the fiddler from Bombay but I don't know if he got Cling Cumm= funnel sanction there.

Sorry to hear you have still that fever which we take up stick it on as it

I remain & shall work I think till Wednesday

Yours truly

C Walker.

DEPARTMENT.

BRANCH.

Draft

Letter / Memorandum / Telegram

Dated

No.

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading:

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams.)

S. 5.
...512C—21—155(Gaul)MFP—(M 1933)—3.7.34—30,000 Pads

From 1878.

To Engineer-in-Chief

Dated 5-4-78
Despatched April 1878
Received

Enclosures No.

General No. 1341
No 187

Chief Engineer thinks it would be desirable to get the Materials for Chamberlain bridge up to Camp during favorable weather for crossing — keeping it stored under cover & increase the Force required to land & forward to bridge site. Have you any objection.

C.E.

Replied 8th April 1878

DEPARTMENT.

BRANCH.

Draft — Letter / Memorandum / Telegram

Dated

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear the line

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No.

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for Telegrams)

P.C.—51—16s.GenbMFP M 1903—9.7.33—50,000 Pads

No. 1192
1233 1254

Insp. Gen.

Insp. Gen. Roads Branch.

Insp. Gen. No 1254 of the 30th March 1876, submitting revised Estimate C.P. 19.876 for the Chorandulla Bridge in Cong.

On conveying the Chief Commr. Sanction to the amount of the Revised Estimate C.P. 19.876, the Insp. Gen. requested to arrange to have the bridge built at once at Mincara.

2 Answer for information of the Chief Commr. Date of the 6th inst. directing plans, orders & reference under appln.

3. Copy & Abstract to be forwarded for the Examiner C.P.O.

4. Plans & Estimate returned with Secretary April 6 1876.

"The transaction is certainly discreditable. But the bridge must be built from the materials purchased & the revised Estimate must be sanctioned. The difficulties in the matter of Bridges in Cong are well known, as also those connected with the rebuilding of portions of the road. I am not satisfied with the reasons given in explanation and think that with ordinary care & foresight the transaction would not have borne the evil fruit it has entailed. I ..."

492 - 496
925 926

1877/78.

From

To The Executive Engineer

Dated Coss Orissa

Despatched

Received 10th April 78.

Enclosures No 1 Estimate & Plans

General No. 1392

No. 187

Executive Engineer

c/o 1017 of the 6th May 77

2 35

forwarding Revised

estimate for the

Chowmukha bridge

Chas Lewis

Copied.

Ind

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No. Dated

To

To be issued on	Issued on
1st Reminder	
2nd Reminder	
3rd Reminder	
Heading :	
Case or Diary No.	
If post copy of telegram required	
Date of despatch of above	
List of enclosures	

(Code word for telegrams.)

S. S.

[M.G.I.P.C.—S1—158(Genl)M.F.P.—(M-1993)—3-5-24—50,000 Pads.

1878

From

To

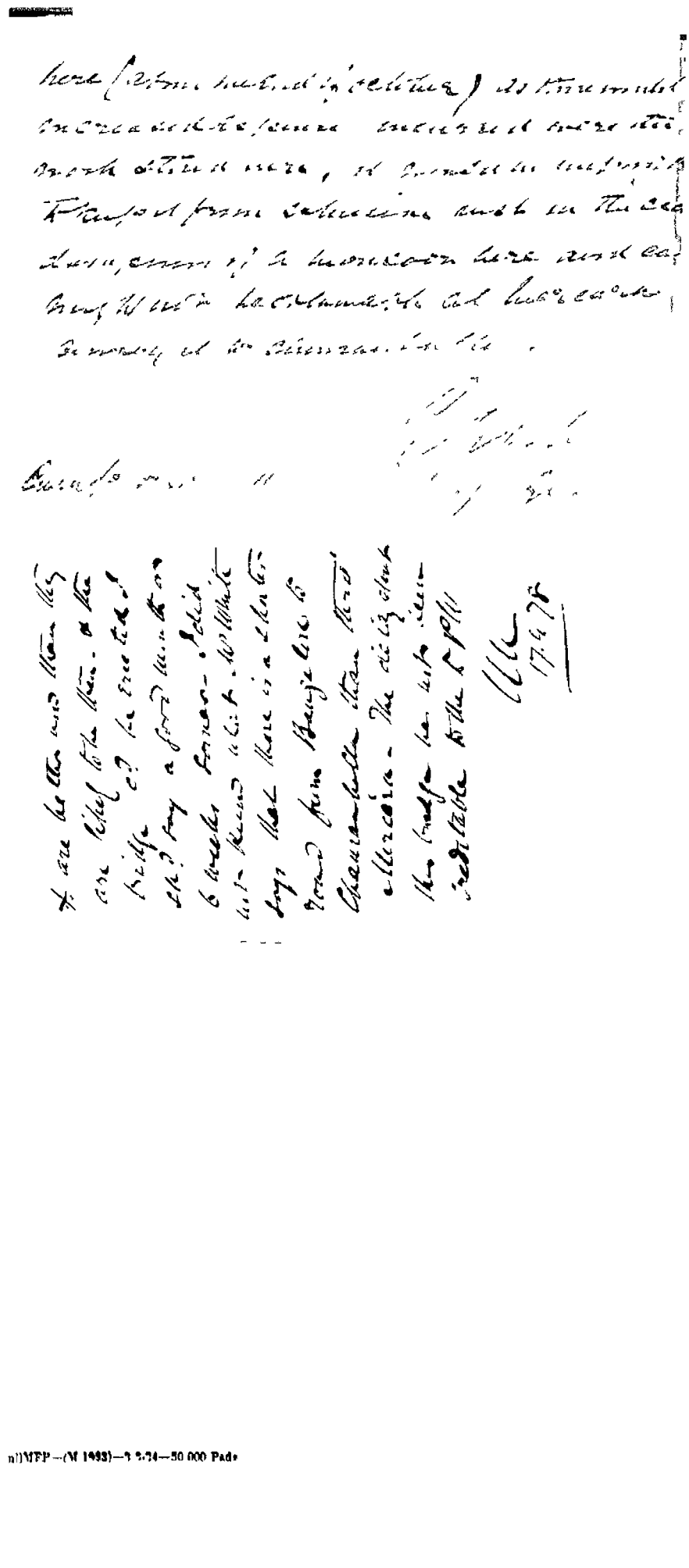
Dated

Despatched

Received

Enclosures No.

General No.
No.
1878.



n)MFP—(M 1493)—9 9-74—50 000 Pads

DEPARTMENT.

BRANCH.

Draft

Letter
Memorandum
Telegram

No.

To

Class for telegrams	Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

To be issued on	Issued on
1st Reminder	
2nd Reminder	
3rd Reminder	
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Date of despatch of above	
List of enclosures	

(Code word for telegrams.)

S S.

M&P(C—S1—158(Genl)MFP —(M 1983) 7 5 34—50 000 Pads

To Chief Engineer.

There is no shorter road
to Chowringhee than
through Burkawa. What
we wish means is that
if we stored at Burkawa
there would be difficulty
in getting carts after monsoon
to take the ironwork on
to Chowringhee. The carts
your daughter would take
two days through

DEPARTMENT.

BRANCH.

Draft

Letter / Memorandum / Telegram

Class for telegrams

Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No. Dated

To

To be issued on

Issued on

1st Reminder

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Heading:

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams.)

IPC—81—153(Genl)MFP—(N 1933)—2 5.34—50 000 Pads.

Applied 1338
222 f 20-6 78

From 1877/78.

To The Executive Engineer

Dated Coorg Virajpet

Despatched

Received 11 March 78.

Enclosures No.

General No. 942 } 942½
No. } 187

Colonel Lushington

Requests the Executive Engineer will be good enough to remit at once Rupees 5821-5-9-0 (five thousand eight hundred

Capt. Hodgson

Coorg Executive Engineer

Rupees 942½

Amount allotment for the 5000.

and thirty one.) to the Executive Engineer Bangalore. Holas being the cost of iron work supplied by Messrs. Nicol and Co. Bombay for the Chorumbulla bridge.

2. Provision has been made in the Reappropriation statement submitted to the Govt of India, to the extent of Rs 3,600 over and above the

S. S.
MGIPC—S1—158(Genl)MED—(M 19331)—3-5-24—50

DEPARTMENT.

BRANCH.

File N

Serial N

Draft

Letter
Memorandum
Telegram

Dated 19

Class for telegrams

Ordinary
Express
Urgent*
Priority
Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams

No.

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Reading

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Cable word for telegrams)

S 5.
M&P—Sl—188(Genl)MFP—(M 1983) - 3.5.34—50,000 Pads

1878

From The Executive Engineer
Coorg Division

To The Superintending Engineer
Roads & Buildings

Dated 20th June 1878
Despatched
Received 26-6-78

Enclosures No.

General No. 1328 } 1878-79. Public No. 2332
No. 222 }

Superintending Engineer's
No 942 Dated 11th March
informing that the
Giraire [illegible] for the
Chowranthalli Bridge
have arrived in Bangalore
& has the honor to request
the Sanction
to be given

Copy sent to Sup. Engineer
Bangalore 24/6/78

to request the Executive Engineer Bangalore to
the girders required for the Chowranhalla bri
not later than 1st October 1878 in order
they may be placed before the end of
after which the place becomes unhealthy.
The girders will have to come to Shevaroy
from there proceed for a distance of 18
along the Shevaroy Tomarpett Road.

Jas. Cu
Executive Engi
Coorg Divisi

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No. Dated

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading:

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams.)

S. S.
[illegible]GIPC—S1—165(Genl)MFP—(M-1993)—3-5-34—50,000 Pads.

Despatched 5775 / 2182

From 1878

To Exchr Hampshire.

Dated — 24 — 6 — 78

Despatched June 1

Received

Enclosures No.

Consul No 2297

No 1 187

Copy Ep. Exchr No 1378 of 20th June regarding the Carrickallen bridge —

I am sending copy of the above for attention in the hope & injunction that as time is very little many steps for the completion of the bridge in question can

Copy sent to Exchequer Office 26-6-78

must be given to get
wounds carried to hos
at the lowest possible
It should not be given
the bandy mainly at
for rides in case 14
mile per 1000 lbs., but
Engineers should be
to find return carts
would take the whol
for some Vacancies
same -

Col.

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No. Dated

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading :

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams)

S. 5.
500/IPC—SI—158(Gen)MGP—(M 1038)—3-5 34—50 000 Pads

From 1878

To — Helps. Comy

Dated — 26

Despatched June

Received

Enclosures No ✓

General No. 533 } 187

No.

in the response of June
No 538 of 20 June regarding
Chumbulel bridge has
the honor to enclose for
his information copy of
a letter Helps dated
the 19 inst with all
possible economy in getting
up the garden & hothouse,
& regret he will be
unable to get out

Oct 2 1882 / 271 July 1882

DEPARTMENT.

BRANCH.

Draft Letter / Memorandum / Telegram

Class for telegrams: Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No. Dated

To

To be issued on

Issued on

1st Reminder

2nd Reminder

3rd Reminder

Heading :

Case or Diary No.

If post copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams.)

S. S.

Min.P.C.—S1—158(Genl)MFP.—(M-1933)—3-5-34—50,000 Pads.

Executive Engineers Office
Coorg Division

No. 1682
271

From

Executive Engineer
Coorg Division

To

The Superintending Engineer
Roads & Buildings

Superintending Engineers No. 2382 dated 26 June 7

Sir,

I have the honor to inform you that the Register of Works shows that an expenditure of Rs 18730-6-4 has been incurred on the works of the Choorandala Bridge

2. Of this expenditure the amount expended on Centreing, is Rs 916-10-11 it appears that the work was carried out in 74-75 and 75-76 the value of which the materials of this centreing could be brought on stock is only Rs 200, as the wood in it is the only portion of it of any value and a great part is rotten

3 There is also an expenditure of Rs 710-13-5 on wood work; a quantity of 340 cubic feet has been executed the quantity now at site only measures 147 cft, and its value at 2-12-0 per cubic feet is Rs 404/-

4 The actual outlay may therefore be reduced by 604 Rs the value of the materials at site now charged to Centreing and to Woodwork.

P P C

5. The cost of the work executed to date will thus be reduced to Rs 18116-6-4. The following is expenditure which must be incurred to finish the bridge

Carriage of Girders to site Rs 563-- This is the bala
in Estimate the c
which will be in
in conveying the G
from Bangalore
not Rs 1000
The amount a
in the Estimate
300 scaffoldi
have to be erec
it is possible
the cost will
less than Rs

Fitting up Girders Rs 500

Teakwood flooring Rs 1008--
Painting Iron work Rs. 200--
Brickwork Rs 75--
add 18116-6-4
Total 20462-6-4

These charges alone would bring the cost over Rs 20,000. There are however the following also amounts of work to be executed

Plastering Rs 141--
Metalling 54--
Gravelling 9--
Carriage of Soils 50--
Marching 100--
Approaches 170--
Total Rs 524--

which brings the cost of the work upto date
Rs 20986-6-4.

6 At Present there are at site Rs 217-3-1 of Materials at site exclusive of Centreing and Woodwork which are not included in these Materials. Of this there is Rs 10-2-9 of Soorkee which is now useless. there are also 3 large Key Stones which are not likely to be used on any other work they are now lying in the bed of the streame their Value is Rs 82-13-4 the totals of these two item = 93-0-1 should also be a charge against the work the remaining Materials at site amounting in Value to Rs 124-3-4 will be utilized in the work or can be transferred to other works.

7 The following is an abstract of charges necessary to complete the Bridge

Expenditure to date Rs 18730-6-4

Value of Materials charged to work which will be brought on stock but which are not now charged. Materials at site in the accounts of the work Rs 604.

0-6-4
4-0-4
19116-6-4

Additional charges to complete the Bridge Rs 2870-0-0

Materials at site which will have to charged to work but which will not be covered by the ratio 93-0-1

21079-6-5

8 During the next months I shall inspect the bridge and report the value of the Centering and Woodwork as personally ascertained.

I have the honor to be
Sir
Your most Obedient Servant

Executive Engineer
Coorg Division

D.

Rec'd 1682
2/71

Rep. Inv. 299
8/1871

125

To Executive Engr.

Sir,

I have the honor to acknowledge receipt of your letter No 1582, without date, on the subject of the account for Chowtuttah Bridge which are apparently by no means satisfactory.

- Rs. 816-10-11 have been expended on "centrings" of which there remain about Rs. 200 worth of wood that may be brought on Stock. Assuming that the wood originally cost Rs. 400, it is not understood how Rs 816. were spent on centrings which I presume were never erected. This calls for investigation.

- Rs. 710 have been spent — cordwork of which 147 C/ft. remain valued at Rs 404. What has become of the balance of the 340 cubic feet originally executed? Of course as much as possible of this wood & of wood from scaffolding should be used for flooring the bridge.

- You state you will inspect the work this month. I look with interest for a careful report from you on the whole subject. I fear it will be necessary eventually to go up to Sahet of Sadra with a project for the bridge, a course which I should like to avoid if possible at all. The cost of work at Chowtuttah appears to me to show serious mismanagement & waste of funds by your predecessors in the Division

I have &c

Cy.

8—8

Nº 29955

f. 25 Augusti 1878

Ex Secretaria Regimini

Comitatus Sirmiensis

Vidit Nº 575/2485 f. 10 Septembris 1878 franco Comitatu Bumbasirensi

Expleat Nº 2595/405 f. 8-11-78

Rejected

17/9/78

Submitted.
CEMS
17/9/78

Please in reply that if arrangements cannot be made for pumping the water for less than the amount stated, there is no hope of the Contractor obtaining any relief from me.

20—9

MW 17/9/78

Rep. Enc. 4189
17/9/78

From The Executive Engineer
To Municipal Engineer
The Superintending Engineer
Dated 16th October 1878
Despatched 16th October 1878
Received

Enclosures No.
General No. 3576 2887 1878

No. 187

Has the honor to state in reply to the Superintending Engineer's No 2297 of 24th June 1878 that enquiries have been made with a view of getting return carts to take portions of the Municipal Bridge to Chetpet.

2

2 It seems the carts bringing coffee
in 3 or 4 at a time and this in itself
a difficulty as the Bridge would have to
in numerous sections each separately
3 In addition the carters say they prefer
ordinary light loads and are averse to
gurders and were indisposed to make
agreement.

4 It will be necessary to hire carriage
which can be had at 1½ Annas a mile
38 carts will be required the weight
being 17½ tons and for 170 miles the
will amount to Rupees 613/-

5 It is noted that the Railway charge
Madras to Bangalore on this Bridge
Rupees 350-13-0.

W Fraser
Major R
Executive Engineer
Bl

Copied No. 2995 of 8th August 1878
To The Executive Engineer
Cauvery Irrigation
Division

Recd No. 2595/405 of 8-11-78

Visited No. 575/2485 of 16th September 1878 Jamm[illegible] O Sundaram

C

DEPARTMENT.

BRANCH.

File

Serial

Draft Letter / Memorandum / Telegram

Ordinary / Express / Urgent* / Priority / Clear Line†

*Only for Foreign Telegrams.

†Not for Foreign Telegrams.

No. Dated 19

Class for telegrams

To

To be issued on

Issued on

st Reminder

nd Reminder

rd Reminder

Ending

Case or Diary No.

Repeat copy of telegram required

Date of despatch of above

List of enclosures

(Code word for telegrams)

S. S
MG1PC—S1—153(Genl)MFP (M 10381)—2·5·34—50,000 Pads

File
Serial

19

From 1879.

To The Secretary Cyprus

Dated Bangalore Divn.

Despatched 20 September

Received 1879.

Enclosures No.

General No. 3575 } 3576
No. } 187

Secretary Cyprus
Cav. 5-5
2405 & the 16th
September 1879.
regarding return carts
to take portions of the
Chirundulla bridge
to Mercara

In answer in reply state if arrangements
cannot be made for forwarding the
about- X
X Rs bridge for less than the Amount
613 stated there is no help for it but
to start it off by end of months.

Capt. R

Offg Supdt. Engrs

No. 3576

Copy to Exec. Engineer Coorg Division
for information

Capt. R

Offg Supdt Engrs